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Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. III. CHICAGO, NOVEMBER 15, 1884. NO. 20.

ORIGINAL ARTICLES.

ON THE ENTRANCE OF AIR INTO THE VEINS AS A CAUSE OF DEATH.

BY GEO. L. PORTER, M.D., BRIDGEPORT, CONN.

Read in the Section of Surgery and Anatomy of the American Medical Association, May, 1884.

While no welcome awaits the advent of a new danger in surgical practice, a cordial reception should be extended to the recognition of its existence.

Such knowledge is the beacon-light, which announces a threatening evil, and may prevent its occurrence. Forewarned is forearmed. The recognition, and not the danger, is new. Newton's discovery was only the new knowledge of a fact in the economy of nature as old as the universe. Dr. Bright, in 1827, published his recognition of diseased tissues, but albuminuria may have vexed the children of men since the flood. Many a victim, with a bronzed skin, and pearl-white sclerotic surrendered an enfeebled life, before the disease had received from Dr. Addison "a local habitation and a name." So who can tell how many deaths had followed the entrance of air into the veins, from the knife of the Druid priest, from "Rome's stout pilum in a stout Roman hand," from the spear of the Macedon, the Scythian arrow, and the scalpel of the surgeon, before Beauchesne in 1818—during that decade of discoveries, and classification of pathological conditions—while exsecting a tumor from the neck of a young man, ruptured the internal jugular vein, and witnessed the first death in surgical practice from the direct entrance of atmospheric air into the veins, which was prominently presented to the profession, and has ever since been a warning to surgeons while operating in the regions of the neck.

Once recognized, the reports of similar cases constantly accumulated, and before 1864 numbered sixty-seven (67).

This dreaded accident occurs without warning, announcing its own coming by the peculiar hissing sound at the opened vein, by the labored respiration, the expression of terror and suffering, the despairing cry, and by the consciousness of impending death. If the amount of air is considerable and suddenly introduced, life is immediately destroyed; if of small amount, and of gradual entrance, preventive means may close the vein, and remedial measures may combat the danger and save the patient.

A number of cases where the bubbling sound and peculiar prostration were symptomatic of the entrance of air, did not result fatally, although followed, in the case of Cooper, by a countenance deadly pale, pupils fixed and inobedient to light, fluttering pulse, irregular respiration, a continual whining cry, and a constant motion of alternate flexion and extension of the right leg, the left remaining quiescent; in the case of Mott, by difficult breathing, violent and irregular action of heart, distortion of face, convulsions of the whole body, and after the convulsions complete hemiplegia. These cases well illustrate the severe, but not fatal, types of this dangerous surgical complication.

The early writers and experimenters reached these conclusions:

I. That the symptoms were:

(a) a gurgling, hissing, bubbling sound in the wound, noticed, says Dr. Green, in forty-eight (48) instances, comprising nearly all of which we have any details;

(b) fatal collapse, or if life is prolonged,

(c) anxious countenance;

(d) labored respiration;

(e) lividity of lips;

(f) dilated pupils;

(g) pulse feeble, or violent and irregular;

(h) convulsions;

(i) paralysis. In twenty-five (25) cases there were symptoms of syncope; in six (6) convulsions without syncope; in seven (7) syncope followed by convulsions; tetanic spasm in the case of Mirault; opisthotonos in the case of Asmus; temporary hemiplegia in the case of Mott.

II. That there is no uniformity as to the time of death; of the fatal cases analyzed twenty-four (24) died immediately: Mirault's lived three hours; Clemot's several hours; Willis's seven (7) hours; Girbal's thirteen (13) and died with symptoms of asphyxia; Roux's seven (7) days, and one of Wattman's twenty-eight (28) days, finally dying of pneumonia: in Girbal's and Wattman's cases no autopsy was made.

III. That the danger-zone was limited originally to the region of the venous pulse, but this was afterwards extended to the uterine sinuses. Of the sixty-seven (67) cases cited by Green the seat of injury was in thirteen (13) the external jugular, in ten (10) the internal jugu-

Medico-Chirurgical Trans., vol. xxvii.
American Journal of the Med. Sciences.
American Journal of the Medical Sciences, No. xciii.

lar; in one (1) each the subclavian, axillary and facial, (11) eleven from uterine sinuses—and Dr. Lente adds seven (7) more—and in the others, with two doubtful cases, the vessels were not known.

IV. That post-mortem examinations revealed air in the circulatory system. Of the fatal cases eighteen were examined after death; in fifteen (15) air was found in the right cavities of the heart; in eight (8) air was found in the venous system; in six (6) in the arterial system; in the case of Dupuytren in the vessels of the brain; in Beauchesne's in all the vessels of the brain, in the inferior vena cava, iliac veins, aorta and crural arteries, (this examination was made eighteen (18) hours after death).

November 6, 1883, I made an official post-mortem examination in a case of suspected criminal abortion. The previous evening a spinster was alone in a room with a practitioner; within ten (10) minutes he came hurriedly out saying she had fainted. She never revived. The night temperature was 37° F.; examination made eighteen (18) hours after death.

No disease of vital organs.

No signs of decomposition.

Bloody stain on underclothes, but no blood in vagina.

In the uterus a five or six months' fœtus; cervix uteri an inch long; mucus plug of a faint pink tinge, shoved up; a small puncture extending through right posterior border of internal os, and emerging in uterus; the decidua vera separated for a space the size of one's palm, the uterine wall throughout its whole extent crepitant and filled with air; no spumous froth in inferior vena cava, or in heart; a sound was heard that might have been the escape of air, as the pulmonary artery was inadvertently cut.

This case is a counterpart of those reported by Dr. Swinburn (*American Medical Monthly*, June, 1860), and by Dr. Hitchcock (Transactions of the American Medical Association, volume xv, p. 83).

The cause of death was thought to be shock from the puncture and the forcible introduction of air into the uterine sinuses.

Allow me, for a few moments, to invite your attention to a case, whose post-mortem appearances were those of death from air in the veins, but during life its presence had not been suspected, as no noise had been heard at its entrance, as the wound was outside of the danger-zone, as the vein was of small size and remote from the heart, as the entrance of air was ten (10) days after the original injury, and as general convulsions—death occurring in the second attack—and difficult respiration were the only symptoms that might be called characteristic.

The entrance of air into the veins as a dangerous secondary complication of surgical operations, and of injuries, has not been hitherto classified. This case is the first, in which its medico-legal aspect was considered.

Upon October 11, 1883, I made an official examination, twenty-seven (27) hours after death of a woman, who had been struck eleven (11) days before with a chair, inflicting an almost incised wound, one and a half (1½) inches long, extending upwards and outwards, its inner angle one (1) inch from median line, and one (1) inch above right eyebrow, penetrating to and partially denuding the bone.

The temperature of the preceding night was 44° Fahrenheit. (Day, 10th, 43°; 67°).

Only slight discoloration around the cut; no union; pus had burrowed three-quarters (¾) of an inch below external angle. No other injury on surface of body.

Under scalp, ecchymosis at external angle of wound.

When sawing the skull, through an aperture near the left squamous suture there escaped bubbles of air mixed with blood; in the vessels of the brain a similar mass.

Abdominal organs healthy and normal.

Subinvolution of uterus—she had passed through a comfortable delivery two months before.

No appearance of decomposition.

Lungs, posteriorly congested—anteriorly normal.

Heart and pericardium carefully removed; walls relaxed; right auricle and ventricle filled with frothy blood; left ventricle contained semi-fluid blood unmixed with air.

In both superior and inferior vena cava was found the same spumous fluid—a frothy mixture of air and blood.

The presence of air in the venous circulation was given as the immediate cause of death.

During the examination I obtained the following clinical history: After the injury there was considerable hæmorrhage for two days, finally controlled by domestic applications. Upon the fifth day she was seen by Dr. Donaldson, and found in a squalid room, suffering from well-marked trismus equally severe on each side of the face; the wound was unhealthy, inflamed, and gaped to the extent of one-half (½) inch. It was thoroughly cleaned, the edges brought together with plaster and covered with absorbent cotton. The jaws were separated by a soft pine stick; chloral and bromide—laxative medicines—and proper food administered.

Next morning there was only a little pain; jaws could be opened half an inch, and wound looked better.

Upon the ninth (9th) day the severity of the trismic spasms returned; wound looked well, but there was no union; at 3 o'clock A. M. on the tenth (10th) day she had a convulsion and was found gasping for breath, and coughing up a thick, tenacious mucus. Nitrite of amyl gave speedy relief. With the convulsion there had been great increase of the trismus; at 6 A. M. she had another convulsion, and the doctor arrived only in time to see her expire.

From the history and post-mortem examination it seemed reasonable and just to conclude that death was caused by the air in veins and heart, entering through divided or injured branches of the temporal or frontal veins, which had been stretched and held open by the traction of the muscles during the tonic spasm of the trismus; that the first general clonic spasm of the convulsion occurred when the air—gradually entering through a small opening—had overburdened the heart and lungs; that the atmospheric air had formed with part of the blood the spumous

fluid, which had been churned back into the veins, and the rest of the blood remaining fluid had passed on into the general circulation and sustained life, until the air constantly increasing in amount had vitiated so much of the remaining blood as to cause the second convulsion and destroyed life.

To this theory there are these objections:

I. The distance from the danger-zone, or limit of the venous pulse. The venous pulse is the wave or current of blood, in the cavæ and jugulars, transmitted by the systole of the heart. If air can enter an open vein and thence pass into the circulation, the distance from the heart is immaterial. Prof. Gross says:[1] "Air thrown into the veins in remote parts of the body will destroy life as promptly and effectually as when it enters in the localities above referred to," *i. e.*, the neck. Dr. Browning, in his admirable monograph on "Veins of the Head,"[2] refers to a report in Volkmann's clinic in 1878, where in attempting to remove a cancer of the dura mater, the longitudinal sinus was opened, and so much air was aspirated as to prove rapidly fatal.

Dr. Warren, in removing a tumor from the thigh, cut the internal saphena and heard the sucking sound of the entering air. The vein was closed, and patient recovered.

II. The long time after original wound before the entrance of air. The subsidence of the inflammatory swelling, the breaking down of coagula, the stretching of a partially divided wall, or its ulceration, would open a previously closed vein.

Dr. S. W. Gross, in *American Journal of the Medical Sciences*, January and April, 1867, mentions an instance where air was heard to enter the external jugular vein, opened by ulceration.

III. The small size of the vein; the tolerance of so large an amount of air in the circulation, and its distribution so generally in the veins, prove its gradual entrance in small quantities. The trismic spasms may not only have opened, but also have canalised the vessel. Wattman (*American Journal of the Medical Sciences*, N. S., vol. ix, p. 171), writes: "By the lateral dragging of the venous coats, and the consequent enlargement of the calibre of the vessel, even small veins may be rendered, under particular pathological conditions, capable, when wounded, of admitting air."

IV. The absence of noise of entering air. That it was not heard may be due to the small aperture or the gradual entrance; to the confusion caused by the spasms of the trismus, or to the ignorance and inattention of her friends.

V. The questionable liability of the spontaneous generation of air in the circulation, claimed as a fact by some, especially the older writers; held by others to be "not proven." After death gases may be formed in the blood by decomposition, but would not be confined to the left side of the heart and immediate veins, and the tissues of the body would also exhibit putrefactive changes. To determine the frequency of air in the veins after death, Dr. Cless,[1] of Stuttgard, examined 1,200 bodies, in which death had resulted from various diseases, and found air in the veins in fourteen cases; in each of these the previous symptoms had led to the suspicion that air was present, as they were cases of blood-poisoning.

Jones and Sieveking (Morbid Anatomy, p. 412) think single bubbles have been heard to burst in the heart of a healthy person.

The most tangible cases are the six collected by Dr. May (Transactions London Pathological Society, vol. ix, p. 154–159), and I submit them to your judgment, respectfully claiming that some of them are not instances of spontaneous generation of air in the veins, but illustrations of the dangerous results following the introduction, into the venous system, of air, whether it be atmospheric, or intestinal, or gases evolved by degenerating tissues. In three there was a local lesion:

1st. Sudden death after opening the median vein, from which flowed immediately spumous fluid.

2nd. Ulceration of cœcum, air traced from ulcer to heart.

3rd. During a catamenial period; air traced from left lateral ligament to heart.

4th. Gangrene of great toe; air traced directly from it to the heart.

5th. Bronchitis; after two attacks of sudden cough, followed by insensibility, lividity, coldness of extremities, rapid pulse and respiration, ending with the expectoration of much frothy mucus tinged with blood, the patient died in the third attack. Frothy blood and air were found in the cavities and vessels of the heart.

6th. Case is inconclusive, as there were putrefactive changes in neck and upper portion of chest.

In the 5th and 6th cases there was also disease of the kidney.

As the final and VI. objection, that this case of secondary entrance of air as a surgical complication is without a recorded counterpart. In the Medical and Surgical History of the British Army in Turkey and the Crimea, vol. ii, p. 277, it is reported that a soldier died suddenly from entrance of air into the veins, three days and a half after amputation of the thigh. Twelve hours after death the right cavities of heart were filled with bright red froth, air mixed with blood, and the same fluid distended the ascending vena cava and two common iliac veins. The surfaces of the flaps were separated by gaseous products, and there had been no closure of the femoral vein, which lay quite open on the face of the stump.

A knowledge of this possible danger would prompt the surgeon to prevent its occurrence, and to carefully inspect open wounds when warned by the early recognition of the characteristic symptoms of the entrance of air.

[1] Gross's Surgery, vol. i, p. 781.

[2] Browning's Veins of the Head, page 70.

[1] Dr. Cless, Transactions Pathological Society London, vol. ix. p. 154.

ADDRESS ON ORAL AND DENTAL SURGERY.

BY TRUMAN W. BROPHY, M.D., CHICAGO.

Chairman of the Section on Oral and Dental Surgery of the American Medical Association, May, 1884.

MR. PRESIDENT AND GENTLEMEN:

A rule of this Association requires the chairman of each Section to prepare and read a paper in general session descriptive of what has been accomplished in his respective Section for its advancement during the past year. If I were to follow strictly the rule I should confine myself to a resumé of the *discoveries and advances made in oral and dental surgery during* the last twelve months. These have been sufficiently numerous and important to furnish material for a far more extended address than I contemplate, and the subjects are especially inviting; nevertheless, I shall venture, with your kind permission, upon rather a wide departure from established custom in this respect, and in place of these matters shall briefly recapitulate the struggles through which this department of medicine has passed since it assumed to antagonize pain and promote the health of man.

It is singular but true, that the healing art was not greatly honored for a long period after approximate civilization had in a measure dispelled the cloud of superstition which rested over the Middle Ages. The profession of arms was really the only one to which those who boasted of gentle blood could with propriety devote themselves, and the man whose occupation it was to make wounds had small respect for the one who in his rude way attempted to heal them. There was some reason for this sentiment. The disciples of Esculapius in those times were not models of learning, and for the most part were doubtless believers in the healing powers of magic rather than patient, thoughtful men, intelligently striving to find natural remedies for the various diseases that humanity is heir to, in the vegetable and mineral world.

But in those days superstition was not confined to the doctors, but it pervaded all ranks of society. The brightest intellects were employed in the laboratories of the alchemists, seeking for the philosopher's stone and the elixir of life. Divines believed in witchcraft as implicitly as in the decalogue ecclesiastics; performed or pretended to perform marvelous cures by the aid of locks of hair, finger-nails, relics of alleged departed saints, and the wisest took alarm or gained courage through spells and potents.

During all this benighted period the medical profession was never the avocation which a born gentleman could adopt without loss of caste, and it is only within the last century that practitioners of medicine as a class have attained real social position. Surgery as a distinctive art appears to have been hedged in by prejudice until a still later date, and its first devotees usually combined it with the calling of a barber. The dual avocation was announced to the world by the familiar striped pole which in these days denotes the apartments of a tonsorial artist, and was intended to represent the manner in which the injured limb should be bandaged. The tonsorial was probably then regarded as the more honorable of the two callings, and it was unquestionably the most remunerative, at all events, gentlemen who let blood, bound up wounds and shaved beards were known as barber surgeons.

The general medical practitioners and surgeons had secured social recognition, were highly respected for their attainments, and had even begun to play the autocrat at times when fortune had been especially kind in making them the favorites in fashionable neighborhoods, before the specialty of dental surgery was ever heard of.

The old-time doctor who went about the country in his gig with a pair of saddle bags between his feet containing those old standard remedies, salts, senna, calomel, and quinine, was always provided with a single instrument with which all teeth were treated, known as a turnkey.

It never appeared to have occurred to the practitioner of this period that there were many and grave diseases which had their direct origin in the masticating organs, or that it was worth while to study them in detail. If a patient was afflicted with odontalgia, the turnkeys were brought into requisition and as for treating diseases of the teeth and parts immediately associated with them on scientific principles, it was indeed unknown. It is scarcely more than fifty years since dental surgery began to be known as a distinct profession.

It was most unmistakably and emphatically a department and an important one of medical science, but it was years before the medical fraternity chose to afford it the slightest recognition. The professional dentist occupied a curious position; the physicians considered him rather in the light of a harmless quack who was endeavoring to perform a certain work which in part they had previously performed, but as it was very disagreeable work and not especially remunerative moreover, they were quite willing that the dentist should have it, and smiled complacently when he answered to the title of doctor. But the public very soon discovered that these dental surgeons were indispensable; that they were provided with instruments adapted to their avocation, that hopelessly diseased teeth were extracted with comparatively little difficulty, and that those which were partially decayed could be preserved by various processes. The large degree of public favor that dental surgeons, as well as others who devote themselves to the treatment of special organs, have secured, demonstrates the necessity of medical specialists. The field of medical science is indeed so broad that it cannot be thoroughly traversed by any one in a lifetime. The human mind can not embrace all the far-reaching ramifications of this profession, hence men have found it expedient to devote their attention to the study of special organs of the body and to acquiring such a minute knowledge of them as the general practitioner can scarcely hope to attain. Incontrovertible facts bear witness that the highest degree of success which has been secured in the treatment of special diseases has been the reward of individuals who made those

diseases the subject of patient, continuous and special investigation.

All this came to be generally understood and in a way acknowledged by the medical fraternity for years before any medical college was brought to consider dental surgery worthy of recognition in its curriculum, and the dental fraternity during this period had no training school of its own.

An earnest appeal was made to a medical college of Philadelphia at an early day by leading practitioners of dental surgery for an opportunity to secure for their students a complete medical education together with their special training, but the appeal was in vain, and in 1839 the dental surgeons, after untold discouragements, succeeded in establishing a college devoted to their interests. Since then others have sprung up here and there until at the present time eighteen colleges of this description exist in the United States. Of course there are defects in the present system of educating oral and dental surgeons which we recognize. Practitioners of our specialty have frequent occasion to deplore their lack of thorough knowledge of the principles of medicine and surgery, but the progressive ones avail themselves of the best advantages attainable when students, and hope that those who come after them may be more fortunate in securing the highest degree of instruction. But while it is all-important that the dental surgeon should be well versed in medical lore, should indeed be a fully educated medical man, it is also of vital consequence to the general practitioner to be accurately instructed in certain branches of our specialty. The lesions incident to the masticating organs are too numerous and in some instances so grave in their results that it is an error in judgment to any longer disregard them in our medical institutions of learning. Dental pathology and surgery should be taught in all our schools of medicine, and so long as these schools fail to recognize its importance and to establish dental professorships they will fail to graduate physicians who possess all the learning it is important for them to possess while prescribing for human ills.

Among the reasons why each medical college should have a professor on oral and dental subjects are the following: First. A thorough knowledge of the origin and development of the teeth should be acquired by every student. Second. He should also understand the time and mode of their eruption. Third. He should be able to distinguish between deciduous and permanent teeth. Fourth. Students of medicine as a rule are deficient in knowledge of the anatomy and physiology of the teeth. Fifth. He should understand the etiology of dental diseases and the hygienic measures requisite to abate or eradicate them. Sixth. Alveolar dental abscesses not infrequently simulate nasal catarrh as well as parotitis, and these abscesses discharge in some instances upon the face, beneath the chin or on the neck as low as the clavicle. Seventh. Neuralgias of the eye and ear in many cases have their unsuspected origin in the teeth. Eighth. Facial deformities are often due to irregularities of the permanent teeth, and these irregularities are due chiefly to neglect of the deciduous ones, or lack of proper advice pertaining to their care and treatment. These irregularities, indeed, not only cause the deformities mentioned but frequently the articulation is greatly impaired and the masticating organs are rendered almost useless. Ninth. Diseases of the maxillary sinus, caries and necrosis of the maxillary bones have their origin chiefly, also, from diseases of the teeth. Tenth. Pathological conditions of the teeth of children render perfect mastication impossible. "Without perfect mastication there can not be perfect digestion. Without perfect digestion there can not be perfect assimilation. Without perfect assimilation there can not be perfect nutrition. Without perfect nutrition there can not be health," and thus is it that injurious impressions are made upon the organism of a child which time can never efface.

These are grave facts and are worthy of the serious consideration of that great body to whom is entrusted the health and life of the community. The importance of this department of medical science you have frankly recognized in establishing the Section over which I have the honor to preside.

In the language of the great "Father of American Surgery," the illustrious member of our profession whose magnificent career has just terminated in death; the late Professor S. D. Gross, whose name we all love and venerate: "This is the most important of all the specialties of medicine; not because the diseases you treat are more important than others, but because of the enormous demand on the part of the community for skilled treatment in this department." But of this fact I doubt not you are already advised, and will agree with me that it cannot fail to contribute in the largest measure to the comfort of the laity and the relief of suffering humanity. I should not expect the medical student to familiarize himself with all the manipulations essential to dental art; but I do insist that our medical colleges should devote as much care to training in this department as is generally given to diseases of the skin, the eye and ear, etc., and that the general practitioner should be as capable of advising his patients in this department as in any other. Let the great tree of medical science foster and embrace every branch of the healing art. Let the student of medicine acquire a thorough knowledge of oral hygiene and dental pathology, and thus fortified, he can render a far better, because an infinitely more intelligent, service to his patients than he is now able to do.

To say what we have accomplished for the profession would consume too much time. In the treatment of compound fractures of the lower jaw marked improvements have been made of late in making and adjusting interdental splints.

If in our enthusiasm we eulogize the brilliant men who have adorned our ranks, we only echo the sentiments of each and every member of this distinguished body, as well as the entire educated world.

The greatest of all blessings, the anæsthetic agent, was presented to the world by a member of our specialty. And so long as humanity can remain unconscious in the swooning dream born of ether or chloroform while undergoing the most extensive surgical operations, the name of Horace Wells, the genius

who first dared to believe that all the sensibilities could be thus deadened, will be remembered and revered.

On examination of a report by the Illinois State Board of Health on Medical Education and the Regulation of the Practice of Medicine in the United States and Canada, I find the total number of medical colleges in these countries to be 135; in the United States 123, in Canada 12. And I am happy to state that in our own country there are now 20 medical colleges which sustain professorships of dental pathology and surgery. I hope the number may be greatly augmented during the next twelve months.

In conclusion, let me urge upon the directors of all schools of medical learning the importance of seeing that the curriculum embraces each and every specialty in which the student should be instructed before receiving a diploma authorizing him to deal with the health, not to say with the life, of those who entrust themselves to his professional care. It is a sacred trust the colleges confide to those whom they graduate as doctors of medicine. The great majority of gentlemen who receive this high honor are anxious to be deserving of it, and to be able in the future to give a good account of their stewardship. But with the best of intentions they will certainly fail, and perhaps ignobly, if their instruction is partial, not complete. Teach them all that can be taught; knowledge is like a good armor, and without it no professional man is prepared to enter the arena where his life contest is to be waged, and won or lost.

A CASE OF LIGATION OF THE VERTEBRAL ARTERY FOR AGGRAVATED EPILEPSY.

BY EDMUND ANDREWS, M.D., LL.D., CHICAGO,
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Read to Section of Surgery and Anatomy of the American Medical Association, May, 1884.

The proposition to ligate the vertebral artery for epilepsy has not met with great favor among surgeons, and the scanty literature upon the subject leaves its value a matter of uncertainty. I offer the following case, not as decisively proving the usefulness of the operation, but as a contribution toward the collection of facts necessary to the decision of the question. Mr. ——, at the age of 17 received a very severe and afflicting mental shock, which was followed by epilepsy. The paroxysms increased in frequency until his mental powers were wrecked. He was in a state of thorough insanity, and from that cause added to the great frequency of the fits, had to be cared for in a state of virtual confinement. Five years later, at the age of twenty-two, he was brought to me in the mental condition above described, and suffering from twelve to fifteen paroxysms every twenty-four hours.

Seeing that he had nothing to lose, I determined to try the operation. Ligation of the vertebral is easiest done in front before the artery enters the vertebral canal, and the high operation is condemned by some good authorities as too difficult, yet I have deemed it possible that the latter location, as being much nearer to the seat of disease, might have some advantages. Therefore I operated at the upper point, cutting down upon the vessel, and tying it between the right transverse processes of the atlas and the axis. The operation proved slow and difficult, notwithstanding previous practice upon the cadaver, but it was successfully accomplished. The paroxysms were not suddenly arrested, but they began at once to diminish in frequency and severity. At the end of three months he was having only about one in three weeks, and then only when provoked by mental excitement, or by indulgence in tobacco. At six and a half months the attacks had entirely ceased, and the mental powers were so much improved that the patient was comparatively sane and able to enjoy his liberty in walking about town. At this time I lost sight of the case and am unable to give any statement of the present condition.

No. 6 Sixteenth St., Chicago.

FRACTURE OF BASE OF SKULL WITH COMPLICATION OF VAGO-ACCESSORY NERVES.

BY JEFFERSON BETTMAN, M.D., CHICAGO.

(Read before the Chicago Society of Ophthalmology and Otology.)

Mr. C. W., grocer, aged 45, consulted me Oct. 1, 1883, for hoarseness and deafness. Three weeks prior he had fallen off a wagon and sustained severe injuries on the left side of head and face. The concussion almost deprived him of his senses; however remembers that persons hurried to his assistance and conveyed him home. Endeavors to communicate were futile, as his voice had sunken to a faint, hoarse whisper, rendering articulation inaudible. Simultaneously violent emesis set in and continued several hours, resisting all attempts to check it. Immediately upon the concussion he experienced a feeling expressed in his own vernacular "as if something had given way in his head," and he seemed to have lost all hearing power in his left ear. A sanguineous discharge, watery in consistency, set in from the same ear and continued oozing, drop by drop, for over two days. Vertigo was so intense that, although in a semi-conscious state, he lost all power of volition and could not exert the slightest control over muscular action. Attempts to swallow restoratives were useless, as he had lost all power of deglutition. Fluids were either rejected through the nostrils or passed into the larynx setting up violent spasm. High fever and a terrible headache, lancinating in character, set in and he lapsed into a stupor. A physician had in the meantime been called in and ordered ice applications to the head and neck. After five days the fever abated and he regained his consciousness. Vertigo was still so intense that he found it impossible to raise his head. The slightest movement of the lower jaw

called forth lancinating pains in the left ear, radiating over the entire left half of head and neck. The left side of neck and mastoid region were acutely sensitive to slightest pressure. All hæmorrhage had ceased, he was entirely deaf on the left ear, and a distressing tinnitus had in the mean time set in. His voice, which at first was gone, after a few days returned sufficiently to enable him to converse in a hoarse, monotone whisper. The power of deglutition was now restored to a limited extent and permitted him to be fed on thin soups and milk. The swallowing of these required visible efforts, and great care and deliberation had to be enforced to prevent suffocatory attacks. A fortnight after the injury he had recovered sufficiently to leave his bed. He experienced great difficulty in retaining his equilibrium and attempting locomotion. His gait was unsteady and staggering with a peculiar tendency to reel towards the left side. Vertigo was still intense, in brief, he experienced all the so-styled Menière symptoms. He also found difficulty in keeping his head erect and suffered from deep muscular pain over the back of his head and left side of his neck.

Status præsens. Mr. W. is robust in figure, well nourished in appearance, and on superficial survey presents but little trace of having undergone much physical suffering. The position of the head is peculiar, being bent to the right side and somewhat forward, the pose being similar to that in torticollis. Gait is unsteady with a perceptible reeling towards the left side. Voice is strikingly husky, weak, and is used with apparent exertion. Left side of head and neck somewhat discolored and bear faint traces of a contusion. Tissues over the left occiput, mastoid region and neck are somewhat tumefied and painful on deep pressure. He complains of a dull fixed pain, "muscular," as he himself states, radiating from the occipital protuberance over the left temporal-frontal region and affecting the muscles of the neck on the same side. The pains in the latter muscles are greatly aggravated by nodding motions of the head. Vertigo is still a prominent symptom, intensified by lowering the head or any sudden movement. Hearing power seems to be entirely obtunded on the left side. Tinnitus of a hissing, rushing nature, localized in the back of the head, is constant day and night, causing greatest discomfort. Disturbances of deglutition are still complained of, compelling him to restrict his diet to liquid food. The day previous on attempting to swallow some solid food, the bolus seemed to lodge in the upper part of the gullet, almost causing suffocation, ere it could be regurgitated.

Physical examination. Left auditory meatus filled with crusts and scales of dried blood, necessitating removal ere permitting detailed inspection of the parts. The upper and posterior walls of the osseous meatus are thickened, intensely congested, in places covered with adherent crusts of dried blood. These portions of canal are very sensitive to touch of the probe. Membrana tympani is lustreless, deeply injected, large interstitial clots of blood occupying the posterior and anterior inferior segments; manubrium mallei drawn inward and upward, posterior fold very prominent. Bone conduction is entirely suspended on left side, hearing power (ærial) tested with acumeter O_1—Eustachian tube patent. Insufflation of middle ear produced no apparent change in hearing power or tinnitus. The membrane responds freely to suction of Siegel's otoscope, being in no part adherent. Right ear is comparatively unaffected, with normal range of audition.

The fauces, the left strikingly so, are darkly congested and extremely relaxed. In the acts of retching, induced by depressing the base of the tongue, the mucous membrane of the post. pharyngeal wall is forcibly drawn to the right side. The left palatine arch is flaccid and non-responsive to titullation with probe. The right faucium, on contrast, is hyperæsthetic, the mere touch of the probe calling forth immediate reflex action. The loss of sensation also involves the entire left half of posterior pharynx. Motions of the tongue unaffected; sense of taste in no way involved. Laryngoscopic examination reveals a state of complete paralysis of left vocal cord. The latter is curved, relaxed and immovably fixed in the cadaveric position. There is an associated paralysis of the left depressor epiglottidis. The left ventricular band is somewhat congested and tumefied, the larynx in other respects appearing normal. Tested with laryngeal probe, there is a marked anæsthesia of entire left larynx and epiglottis. Sensation to touch is so reduced, that a prolonged application of the probe is tolerated without inducing reflex spasm or cough. The right cord functionates normally, and sensibility of parts is intact. The intelligence of the patient was of such a grade as not to enable me to determine precisely the state of the crico-thyroid muscle. Pressure over the left thyroid cartilage is still very painful. Auscultation over the left lateral region of œsophagus, at a level with the cricoid cartilage, yields a noisy rumbling sound (*deglutitio sonora*) during an act of deglutition. Fluids are swallowed slowly and with apparent effort. My brother, Dr. Boerne Bettman, kindly made an ophthalmoscopic examination, and found distinct congestion of left retinal veins. Appetite is good; pulse 80, full and regular. Prescribed a solution of iodide of potash, an anodyne embrocation to back of head and neck, advised absolute rest, both mentally and physically, and requested him to return in a few days. In the meantime, contrary to my directions, he engaged in business, and suddenly left the city to transact some mercantile affairs. I heard nothing of him, till he again consulted me in June last, some nine months later. His physical appearance is, if anything, more robust and florid. Voice is still very husky, intonation undecided and faulty. Firmness in gait has not yet returned, and the patient at times still experiences a dizzy, reeling sensation. Vertigo, although much diminished, has not entirely left him. The left side of head and region of trapezius and sterno-cleido mastoid muscles still painful and somewhat sensitive to touch. The patient has never lost the sensation of a foreign body lodged in the throat. Deglutition has improved very much; but for fear of any mishap, he is compelled to swallow slowly and deliberately. Hearing has in no way improved, and it is the annoyance and discomfort of the persisting

tinnitus, that induced him to consult me again. The membrane is depressed with radiiform thickening of the membrana propria. A small scar, flaccid and reflecting the light, occupies the anterior inferior segment of the membrane. Insufflation produces no alteration in hearing. Sensibility of faucium is entirely restored, but motor action is still very sluggish. The left cord is still fixed in a cadaveric position. Reflex irritability is everywhere reëstablished, palpation evoking prompt reaction. Repeated applications of Faradeic and galvanic currents with administration of strychnia have as yet produced no perceptible improvement.

The total loss of hearing, the entire suspension of bone conduction on the same side, the long-continued oozing of blood, the various cerebral symptoms, all indicate a serious lesion of the internal ear. The concomitant laryngo-pharyngeal symptoms, both motor and sensory, necessarily include an involvement of the nerves supplying these functions. Bearing in mind the construction of the base of the skull, the relation of its component parts to each other and to the various nerve trunks passing through the foramena, it will not be difficult to trace and establish an intimate connection between the various complicated symptoms. A knowledge of the relations of these parts being requisite to associate the various pathological features in the case, it may not be superfluous to cursorily survey the leading anatomical landmarks of the region involved.

The jugular foramen (*foramen lacerum post.*), formed by the apposition of the jugular fossa of temporal bone (*pars petrosa*) with the articulating surface of the occipital bone, gives exit to the glosso-pharyngeal, vagus and spinal accessory nerves and internal jugular vein. In the passage through the foramen the vagus accompanies the spinal accessory, being contained in the same sheath of dura mater with it. The glosso-pharyngeal has its separate investment. The vagus at this point blending with fibres of spinal accessory, forms a well-marked ganglion, the jugular ganglion. Just inferior to its exit from the foramen, the fibres of the vagus blend with the accessory or inner ramus of the spinal accessory to form the plexus ganglioformis (*plexus nodosus*). It is this inner branch of the accessory that furnishes the motor filaments to the recurrent laryngeal, sup. laryngeal and pharyngeal nerves, offshoots of the vagus (Bischoff, Longet, Schech).[1] The spinal or outer ramus of the spinal accessory passes, in connection with the accessory branch, through the jugular foramen, and innervates the sterno-cleido mastoid and trapezius muscles. The superior laryngeal and pharyngeal nerves arise from the ganglioform plexus. The former is essentially a sensory nerve of vagus origin, the motor filament supplying the crico-thyroid muscle being, according to most physiologists, of accessory origin. The two pharyngeal branches, in conjunction with motor fibres of spinal accessory (Rüdinger, Luschka, Erb, Seeligmueller),[2] and possibly branches of the glosso-pharyngeal (Joh. Müller, Jolyet), inervate muscles of pharynx, soft palate and uvula. Pressure or any lesion of the gangliform plexus will call forth both sensory and motor disturbances in the larynx and pharynx. It is this part of the vagus nerve that Ziemssen[1] considers the first point exposed to injury outside of the cranial cavity. The complication of the muscles of the neck on left side, render it conclusive that the lesion in the case also involved the spinal or outer ramus of the spinal accessory nerve, locating the seat of injury above this point. Pressure on the vago-accessory in or at the jugular foramen will call forth a train of symptoms similar to those described in the clinical features of the case. The concurrence of aural and laryngo-pharyngeal symptoms render it extremely probable that the injury took place at this point. The direct concussion produced a fracture of the petrous portion of the temporal bone, the fissure extending through the entire bone to the border of the jugular foramen, involving the external osseous meatus, tegmen tympani and labyrinth. These immediately followed a disarticulation or displacement of the component bones at this part, with direct compression upon the structures passing through the foramen.

The absence of symptoms indicating an impaired function of the Glosso-pharyngeal nerve renders it probable that this nerve escaped injury. Although Joh. Müller[2] claims that the muscles of soft palate and uvula are in the main inervated by branches of the glosso-pharyngeal nerve, the more recent anatomical investigations of Burckhard[3] and Bendz,[4] confirmed by clinical observations of Erb[5] and others, trace the principal supply to the vago-accessory nerves. There was absolutely no impairment of sense of taste in the case, a fact elicited by personal investigation, and this in itself is sufficient to warrant an exclusion of the glosso-pharyngeal in the lesion. What function the glosso-pharyngeal exerts in the sensory inervation of the pharynx, is still *sub judice* (Foster)[6]. The anatomical circumstance that the vago-accessory nerves have one fibrous sheath in common, separate and distinct from that of the glosso-pharyngeal, may possibly to some extent account for the escape of the latter nerve. According to Mackenzie[7] "as the results of experiments of vivisection it would appear that when a pneumogastic nerve is injured, the opposite nerve, as a rule, suffices to discharge the more important functions previously supplied by both nerves. Hence, although in the first instance, the action of the heart and lungs is temporarily disturbed these organs generally soon recover, etc." The absence of cardiac disturbances so far as could be elicited at time of examination, render it presumable that, if any had taken place prior to this, they were merely transitory in nature. Cases of intracranial pressure or compression upon the nerves in their course through the jugular foramen are exceedingly rare. In the six instances recorded, all with but one exception were due to malignant tumors involving the base of the

[1] Vide Schech, Zeitschrift für Biologie. Bd. ix.
[2] Vide Henle, Handbuch der Nervenlehre des Menschen, S. 435—1871

[1] Ziemssen, Handbuch der Spec. Pathologie. *IV.* Bd. I. S., 424—1879.
[2] Müller Archiv. 1837. S. 275.
[3] Burckhard, Heidenheins Studien des Physiol. Inst. zu Breslau, Heft 4. S. 250.
[4] Bendz, vide Henle loc. cit. S. 436.
[5] Erb, Arch. für Klinishe Med. Bd. iv.
[6] Foster, Textbook of Physiology, New York. 1880. p. 295.
[7] Diseases of Throat and Nose. Vol. i, page 482. 1880.

skull. In a case recorded in a prelaryngoscopic period by Dufour[1], compression of spinal accessory nerve was induced by an intracranial echinococcus cyst. Chronologically allied to this, is an instance of pressure upon both spinal accessory nerves subsequent to cancerous infiltration of the bones of the basis cranii, observed by Türck[2]. More recent observations have been made by Gerhard[3], Fraenkel,[4] Schech[5], Mackenzie[6]. In all, as already mentioned, the compression was due to encroachment of malignant tumors. In Fraenkel's observation the vagus nerve was impinged upon at the left angle of the lower jaw by a lympho-sarcomatous growth. The publication of Schech, admirably thorough and exhaustive in its details, is highly valuable in assisting in the solution of many mooted points in the physiology of these nerves. Peripheric nerve lesions arising from pathological changes in the cerebral root centres, observed in tabes, bulbar paralysis, cerebro-spinal sclerosis, apoplexy and epilepsy, can not be included in the same category. Below the ganglioform plexus, the vagus, partly attributable to its more exposed position, has been injured in various ways.

From an otological standpoint, the fracture, excluding the nervous complication, offers but little of special interest. Judging from the clinical features alone, it is impossible to localize with any degree of certainty the exact extent of the fracture, and to detail the various parts of the structure involved. The acute localized tenderness of the superior posterior wall, the pains produced by movements of the lower maxilla, render it presumable that the fracture extended along the osseous meatus. The aural symptoms combined with the distinct cerebral disturbances, demonstrate beyond doubt an involvement of the labyrinth. According to Buck,[7] fractures occur most readily at the lines of union of the tympanic, petrous and squamous portions of the temporal bone. Hartmann[8] classifies these features into two divisions ; one, in which solution of continuity involves the lines of union alluded to above, and a second, in which the fissure extends transversely through the int. audit. meatus and vestibule of the labyrinth. In the preponderating number of cases, fractures of the basis cranii end fatally, cerebritis or meningitis developing. Where great drainage of ear has ensued, Hutchinson[9] states, that in fatal cases inflammation of subarachnoid spaces is more apt to occur. As exemplified by cases recorded by Eysell,[10] Trautmann[11] and others, cases of complete recovery, *quoad vitam*, even in most complicated cases, are by no means isolated. Meningeal troubles need not of necessity supervene, healing of the fracture taking place by fibrous union (Schwartze).[12] In the most favorable cases, hearing power is almost always irrevocably lost. In those exceptional instances, where a gradual restoration of hearing took place, (Schroter)[1] it is doubtful whether the structures of labyrinth were involved in the fracture. Tinnitus is an almost constant feature, and generally proves irremediable. The constant dull headache complained of and referred to the occipital region and nucha, render it probable that the structure at the base of the brain have not yet been fully restored to normal condition. The prognosis in such cases should be guarded, as instances have been recorded where patients, apparently recovered from the immediate effects of the injury, months later suddenly developed a fatal pachymeningitis.

Treatment can merely be of an expectant character in these cases. Strict precautions must be enforced to check or keep in obeyance any meningeal symptoms that may develop. Tissue changes take place in the nerve structures involved, and it accordingly remains to be doubted whether any remedial agent can restore their functions. Even in those possible cases where the cause of the compression is but temporary in character, such as a hæmorrhagic exudation, the natural tendency would be to gradual restoration independent of medicinal aid. Physiologically the case is interesting in confirming experiments by vivisection, that the vagus nerve of the opposite side gradually performs the more important functions previously discharged by both nerves. Why this restoration should merely be restricted to the afferent fibres, as already mentioned essentially of vagus origin, and not include the efferent fibres, demonstrated conclusively to be filaments of spinal accessory, remains an open question for physiologists to solve.

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[1]Dufour, Essai clinique sur les maladies de la voix, etc. Paris. 1857.
[2]Türck, Klinik der Kehlkopfkrankh. S. 437. Wien, 1866.
[3]Gerhard, Jenaische, Ztsch. f. Med. u. Naturwissensch. 1864.
[4]Fraenkel, Berl. klin. Wochenschrift. 1875, No. 3.
[5]Schech, Archiv für klin. Med. Bd. xxiii. S. 160. 1879.
[6]Mackenzie, loc. cit. Vol. i. p 431.
[7]Buck, *American Jour. of Otology*, vol. ii.
[8]Hartmann, Krankheit des Ohres, 1881, s. 190.
[9]Hutchinson, *Lancet*, 1875, vol. i.
[10]Eysell, Arch. für Ohrenhlk, s. 208, 1873.
[11]Trautmann, Ibid. Bd. xiv.
[12]Schwartze, Klebs. Handb. der Patholog. Anat. 6te L., S. 15, 1878.

HÆMORRHAGE OF THE VOCAL CORD.

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Hæmorrhage of the vocal cords is so rare that the following case will be of interest to many. The patient, H. B., æt. 45, merchant, came to me during the latter part of October complaining of hoarseness and discomfort in the larynx which had come on suddenly that morning.

On rising he had felt perfectly well, but while washing he was suddenly annoyed by a sensation as of some foreign body in the larynx that he described as a "lump in the throat" which troubled him particularly whenever he attempted to swallow.

Moderate hoarseness soon supervened.

When he called at my office about five hours afterward, the same sensations were still annoying him; he was quite hoarse and a small spot over the thyroid cartilage was tender to the touch. No constitutional symptoms were present.

I found the whole left vocal band of a brownish-red hue and thickened by sub-mucous infiltration of blood to about twice its normal size. Other portions of the larynx were normal.

I applied powdered iodoform to the larynx and di-

[1]Schroter, vide Urbantschitch, Lehrb. d. Ohrenhlk. Wien 1880, S. 293.

rected the patient to return to his home and apply cold compresses to the neck constantly for the next forty-eight hours. At the same time he was cautioned against the use of tobacco and directed to refrain from talking.

Two days later he returned to my office much improved. I found the vocal band much thinner than before, and its free edge lighter in color from partial absorption of the extravasated blood.

I applied a mild astringent spray to the larynx and as it was imperative for him to go about his business, I directed him to wear a silk handkerchief about the neck every day and apply a cold compress every night while soreness continued, or while the larynx should feel fatigued after talking. I also cautioned him not to smoke and not to use the voice when possible to avoid it.

No exciting cause for this extravasation could be detected, in which respect the case resembled a large percentage of the cases of hæmoptysis.

The patient first came under my care about two years ago, because of nasal polypi and anosmia. The polypi and all other causes of obstruction in the nares were completely removed, but the sense of smell was not restored; however, it would return temporarily at times, lasting for a few hours and then disappear without perceptible change in the physical condition of the nares.

This, together with a history of nervous prostration extending over two or three years before he first saw me, and not yet entirely recovered from, led me to attribute the hæmorrhage to disturbance of the vasomotor nerves.

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MEDICAL PROGRESS.

PHYSIOLOGY AND PATHOLOGY.

SOME RECENT OBSERVATIONS UPON THE SUPRA-RENAL CAPSULE.—The *Lancet* gives a brief of the experiments performed by M. Tizzoni during the past year upon the supra-renal body. In order to avoid unnecessary sacrifice of life, the author studied the best methods of removing the supra-renal capsules without damage to the surrounding structures and with the infliction of the least possible injury to the system at large. After having made a small incision in the lumbar region at the level of the adrenal body, the parenchyma of the capsule was lacerated, and its ablation practised, strict antiseptic precautions being observed. On the right side the neighboring vena cava inferior rendered the operation of extirpation difficult. For his experiments Tizzoni generally made use of rabbits weighing only about a kilogramme each, because in this circumstance the muscular mass of the lumbar region was but little developed, and so the operation was facilitated. When the animals succumbed as the result of the operative procedure, death was not due to the nervous accidents signalized by Brown-Sequard, but was caused by subcutaneous and intermuscular suppuration infiltrating the neighborhood of the wound. The majority of the animals which exhibited contracture of one or other of the front or hind limbs recovered, and it was only rarely that paralysis or death followed the appearance of the spastic contraction. The necropsy revealed in such cases the presence of an exudation about the meninges of the spinal cord and a softening of the spinal marrow without any demonstrable connection of the lesion of the supra-renal capsule with that of the nervous centres. Outside these complications—which may be regarded as quite exceptional—the operation was generally followed by no grave accidents; the animals, if the etherization were not too powerful, gave signs of pain only when the adrenal capsule was seized and lacerated. If this body, instead of being completely removed, were allowed to remain in the cavity of the abdomen (of course, after laceration of the capsule), the healing was much more rapidly effected; and if, some days later, the animal were killed, not a trace of the lacerated parenchyma of the supra-renal capsule could be detected; complete absorption of the essential elements appeared to have taken place. Thus, according to Tizzoni, the supra-renal body is absorbed without giving rise to any phenomena such as might be interpreted to be of the nature of blood-poisoning, so that the adrenal capsule contains no organic poison; and if by treating the organ with various chemical reagents a poison be obtained, one may affirm that it is not produced during life, and consequently the poison must be due to cadaveric decomposition. A certain time after the extirpation of the capsule there commences to appear a brownish discoloration of the nose, as if the animal had been plunged in charcoal powder after having drunk some liquid. Some small blackish linear markings also may be found scattered here and there over the mouth and nasal fossæ. The mucous membranes of these regions seem at first to be intact, but at the end of some days they become dotted with minute spots of the color of tobacco: the minute areas become circular as they enlarge, and by coalescence a bronzed surface of considerable extent and of a uniform tint is formed, and reaches its maximum intensity about the sixtieth day after the operation of removal or laceration of the supra-renal capsule.

A remarkable circumstance is mentioned by the Italian observer, which is to the effect that the destruction of one capsule only brings about unilateral pigmentation of that side of the body on which the operation was performed. If, however, the median line of the body were trespassed upon, the pigmentation extended to the whole of the surface of the body. [The text from which this report is taken leaves it doubtful by what the median line of the body was to be trespassed upon. We (the *Lancet*) take it that should the pigmentation proceed beyond the mesial line, then the discoloration would be universal.] White rabbits did not present any of the pigmentary phenomena.

From a histological point of view the following observations were made: When the coagulum of blood and the parenchyma of the lacerated organ had been resorbed, the fibrous envelope of the capsule

was found to be filled with a connective tissue of new formation, together with large granular cells like those which are found in white softening of the brain; giant-cells which had undergone caseous degeneration were also to be seen. The last fact would seem to negative Nothnagel's opinion that chronic caseous inflammation of the adrenal body was always of a tuberculous nature. These giant-cells were produced in the same way as those which develop as the result of irritation of serous membranes by a foreign body. Another observation was made by Tizzoni which appears to be extraordinary, to say the least of it. The various elements of the supra-renal capsule in the rabbit may be "reconstructed." This fact is alleged to have been observed 144 days after the almost total destruction of the supra-renal body in a rabbit. The size, color and structure of the organ were normal in another rabbit 26 days after the operation, presumably, of free laceration. At the autopsy a small nodule exhibiting active new formation of supra-renal parenchyma was also discovered. A fine interlacement of filaments of the great sympathetic cord with numerous ganglion cells and gangliform swellings had developed and covered the cortical substance of the adrenal gland of the animal last referred to. The Italian pathologist does not speculate on the mode of production of the bronzing which he observed. Many of the statements made by him require careful consideration at the hands of other experimental pathologists, but as opening up afresh the relations of the adrenal body to the system at large, the results of Tizzoni's experiments must be admitted to be of decided value.

MEDICINE.

Periodical Change of Color of Hair.—The *Lancet* describes the case of a young girl aged thirteen, of an idiotic type, who was admitted into the asylum at Hamburg on April 1, 1880, and died there in 1882. At the age of three years she began to be affected with spontaneous movements like those of St. Vitus's dance, which were chiefly confined to the head and upper limbs. Between her fifth and sixth years she had become the subject of well-marked epilepsy. She was able when four years old to run round a table, but her powers of progression steadily diminished, and the lower limbs passed into a condition of chronic stiffness. When in the asylum of Dalldorf (Hamburg), she had epileptic fits about every eight or fourteen days; besides, it was observed that she experienced alternations of agitation and calmness, each of about a week's duration.

In the period of agitation the turgescence and redness of the face were most pronounced, the pulse was full, the skin warm, and actively transpiring, at the same time that the mental condition was one of extreme obstinacy. Further, it was often remarked that the color of the hair underwent decided changes; sometimes it was blonde and at others red, whilst the depth of these colors also varied. The alterations in color occurred in the brief space of two or three days; the first appearance of change was observed at the free ends of the hairs; the same tint of hair persisted for seven or eight days. Each of these periods of changes of color of hair coincided with a phase of agitation or sedateness. During the state of excitement the hair always had a red color, whilst pending the phases of stupidity the blonde tint prevailed. The case appeared to be one of genuine pathological change. The paler hairs differed from the darker ones only in the presence of more numerous air spaces. The structure of the brain and spinal cord was much altered.

Willing and Thought-Reading.—The *British Medical Journal* has an article under this heading which shows that the mental exertion employed in such amusements is not without its perils and mischiefs, of which two cases, reported at the last meeting of the Cambridge Medical Society, afford characteristic examples. The one case was related by Mr. Deighton. In November, 1883, he was summoned in urgent haste to see an undergraduate. He found him surrounded by his friends, who said they had been playing the willing game, and that he had been blindfolded and willed; soon afterwards he became tottery on his legs, and went off into a state of convulsions. When seen, he was tossing about on a sofa, with face slightly flushed, the movements of the arms and legs being most irregular, almost equally exaggerated on both sides. The muscles of the face and neck were least affected, but he spoke in a jerky way, and, on putting out his tongue, it was protruded and withdrawn suddenly. He was quite conscious, clear and collected, and said that he tried to prevent himself from tossing about, but could not help it. The pupils acted to light, and were natural in size. He recovered after calming treatment and rest. It was an attack of induced chorea or hysteria brought on by mental strain.

Mr. Wherry also reported a case. He was sent for one evening to see an undergraduate who had become suddenly ill during the willing game. It appeared that his friends had blindfolded him in the same manner, and were willing him to do some simple action, when all of a sudden he became weak in the knees, and had to be helped to a seat. The handkerchief was removed at once, but the patient did not seem at all himself. Mr. Wherry found him leaning against the mantel-shelf, looking fixedly downwards in a dogged and morose attitude. He answered questions in monosyllables in a hesitating way, not stammering, but with a jerk and without expression. Usually, his friends said, his manners were natural and polite. The pupils were dilated, with no action to light, and his memory was a blank as to the details of the game. He was sent to bed, and when seen the next morning he was better; his pupils were normal and active to light, but his manner was still odd, and his speech was remarkable. When advised to leave Cambridge for a few days' change, he refused rudely, but was afterwards persuaded by his friends, and returned quite well. Mr. Wherry remarked upon the strange state induced by this willing game; the dogged and morose manner, slow replies, no action of the pupils to light, rapid recovery, and no recollection of the period during which he was being willed—altogether

a condition which, he was informed, corresponded with the hypnotic or mesmeric state, and one in which medical men were interested.

WINTER HÆMOGLOBINURIA.—Professor Nothnagel, of Vienna, has given a very interesting clinical lecture on this subject which is reported in the *Medical Times*. His patient complained of certain peculiar sensations, as the result of chilling the feet in the winter, a shivering throughout the whole of the body, afterwards feeling hot and perspiring profusely. He suffered from various acute infectious diseases during childhood and at the age of 18 contracted syphilis. Three years ago he had the first attack as following exposure to cold, and during the past winter the attacks have occurred so frequently that the patient is almost afraid of going out when it is cold. He further states that during the attack he suffers from great thirst as long as the shivering lasts. We cannot conclude that the main affection is of a malarious nature, for its occurrence is irregular and dependent upon the influence of cold. Moreover, he states that he has no attacks during the summer, but only in winter. The urine passed immediately after an attack is black, subsequently it is clear. A specimen of the black urine boiled with caustic potash, causes a precipitate of the phosphates of a brownish red color, no red corpuscles under the microscope. Albumen on boiling giving a flaky sediment. This sediment on boiling with alcohol which has been rendered acid with dilute sulphuric acid, gives up its blood-pigment to the alcohol. The blood-pigment therefore exists free in the liquid and not in combination with red blood-corpuscles. In hæmaturia we find red blood-corpuscles. Here we find blood-pigment which with the spectroscope gives the characteristic absorption lines of hæmoglobin, but not a sign of a red corpuscle, hence this is called hæmoglobinuria.

The conditions under which this disease occurs have been very much studied in the last fifteen years. First it has been observed in cases of poisoning, such as carbolic acid, sulphuric and phosphoric acids, and in cases of poisoning by arseniuretted hydrogen: secondly, in burns of the skin; thirdly, in certain acute infectious diseases, as for instance, scarlet fever and typhoid. In all these conditions the affection is *rare*. A large number of cases were observed about ten years ago, when the treatment of consumption and carcinoma by the transfusion of lamb's blood was in vogue. It was shown that when the blood of an animal of one species is transfused into the system of one of another species, it is injurious to the latter. If one transfuses blood from a lamb into a dog, it may prove fatal to the latter, just as it might to a man treated in a similar way. The serious symptoms observed in such a case are to be considered as a direct consequence of the transfusion, the blood corpuscles of one species having a pernicious effect on those of another. Landois has shown that marked hæmoglobinuria occurs in such cases, which he attributes to the fact that the red blood-corpuscles are dissolved; it is therefore an artificial hæmoglobinuria.

This special affection of paroxysmal or winter hæmoglobinuria is a disease seldom met with. The majority of such cases have been recorded in English, American and German literature; very few have been recorded in French literature, and still fewer in Russian. The disease presents the following symptoms: "The patient is seized with it in paroxysms, hence the name paroxysmal. In the intervals he is perfectly well, though exhausted and weak owing to the loss of the blood-corpuscles which have been destroyed, but besides this general weakness he does not complain of anything. It is the effect of cold on hands and feet which especially produces the affection. Sometimes one is able to bring on an attack artificially. Rosenbach gave one of his patients a cold bath in summer, and an attack resulted. The sensations of the patient during the attack are very unpleasant; he yawns constantly; he is then seized with shivering through the whole of the body which is followed by heat and perspiration (a temperature of 104° F. has been observed). The patient then passes urine which is of the color of blood; the same color may be noticed two or three times in the subsequent 24 hours and then it disappears. Sometimes casts are to be found in the urine, but this is an exception; there may, indeed, be blood casts, for the hæmoglobin may coagulate while still in the urinary passages. Sometimes hyaline casts are also to be found.

How does hæmoglobinuria arise? Probably by the influence of cold. If we make the blood freeze, the blood-corpuscles are destroyed, and we then have blood with a color like lac dye. During the attack there circulates in the vessels ruby-colored blood; that is to say, there is free hæmoglobin—this has been proved by the abstraction of blood by means of a cupping-glass during an attack; the hæmoglobin is said to have an influence on the vaso-motor centre, hence the shivering, followed by heat and perspiration. As to the prognosis, the disease lasts in some cases several years and then disappears suddenly. In some patients we obtain good results from anti-syphilitic treatment, even when the disease has not a syphilitic origin. Besides this the patient must have good nourishment; he must live on meat, milk, eggs and wine, and iron must be given to him. If we do not succeed in curing the patient in this way, we must order him to a milder climate during the winter.

SURGERY.

ON PREPUCE GRAFTING.—Under this heading R. Clement Lucas, B.S., advocates in the *Lancet*, the use of the prepuce, as removed from children in the operation of circumcision, for obtaining cuticle to apply to extensive burns, etc. There is seldom any danger of communicating disease in this way, as when balanitis is associated with phimosis it can, and should, always be cured before operating. The surplus skin of this part, from its suppleness, thinness and vascularity, appears to be peculiarly adapted for transplantation, so that Mr. Lucas has found grafts from this source adhere when those from other parts have

failed. These grafts may be readily obtained from childrens' hospitals where the number of children that are generally brought for the treatment of phimosis is so great that many days will never elapse without the surgeon being called upon to perform circumcision. The time which may be allowed to lapse between the removal of the skin and its application in the form of small grafts to a wound may probably be extended until signs of putrefaction begin to appear. Mr. Lucas has allowed from a half-hour to an hour sometimes to pass before the skin has been thus made use of. In no case has he placed them in hot water or made any provision for maintaining them at the temperature of the body. If the recipient of the grafts lived at a distance from the person yielding the skin, he believes the skin might be conveyed in a small glass bottle or wrapped in gutta-percha, without loss of vitality, for some hours.

It is possible that some surgeons may take a sentimental objection to this method of healing large granulating sores; but any such feeling should yield to the excellent practical results which may be obtained by it. The only reasonable argument against it is that disease might by careless grafting be introduced into the system of a healthy child; but this is so remote that with ordinary caution it would be impossible. On the other hand he believes the prepuce of a child possesses a germinal vitality which renders it peculiarly serviceable for grafting.

Successful Nephrectomy for Calculous Pyelitis.—*La Gazzetta degli Ospitali* (*Lancet*) contains a report by Dr. A. Salomoni of a case in which Professor E. Bottini successfully removed the kidney. The operation was performed at Milan, on the 8th of June last. The patient, Annibale M., aged 27, had had two calculi removed by lateral lithotomy fifteen years previously. Three years after that operation an abscess formed in the right iliac fossa. It opened spontaneously, and after a few months reappeared in the lumbar region, when it was opened with caustic potash. A permanent fistula resulted, and proved intractable to all local and constitutional treatment. The patient lying on the left side, under chloroform, Professor Bottini, under strict antiseptic precautions, made a vertical incision through the whole ileo-costal space, three inches outside the quadratus lumborum. The kidney having been isolated, the renal artery was secured in one ligature, the vein and ureter in another. The space having been well cleared and all bleeding stopped, a drainage tube about one-third of an inch in diameter was introduced. The walls of the fistula were excised, and the wound united by one deep metallic suture and eight superficial silk ones. The operation lasted a little over an hour. The antiseptic dressing was renewed daily, the metallic suture was removed on the third, and the silk ones on the fourth day, when the drainage-tube was shortened. It was withdrawn on the eighteenth day. Progress was uninterrupted. The highest temperature, 100° F., was reached the second day; urine in normal quantity, and without deposit, was passed without pain or trouble. The patient left his bed on the sixth, and went home on the eighteenth day, when only a slight sinus remained, about an inch deep. The extirpated kidney weighed 48 grammes, and measured vertically 6 centimetres—4 across and 2 antero-posteriorly. Its consistence was greater than normal; color grayish. On section, the upper three-fourths consisted of fibro-cellular tissue; the lower fourth of renal parenchyma, altered, with the pyramids in process of disappearance. The fistula led into the pelvis of the kidney, which was dilated, with thickened and suppurating walls, and contained, besides some uric acid sand, two small calculi about the size and shape of grains of barley.

On Inflammation of the Eye and its Annexes as Caused by Astigmatism.—Dr. Georges-Martin (*Jour. de Med. de Paris*) considers that we do not appreciate sufficiently the serious conditions which may follow directly as caused by astigmatism. For a long time we have looked upon the astigmatic eye as a badly constructed optical instrument, producing only deformed images upon the retina; this idea does not conform to the other view that astigmatics are capable of excellent vision. A knowledge of the partial contractions of the ciliary muscle explains why the images are *not* deformed, and why vision is *not* defective. The optic defect of the astigmatic eye finds an intelligent corrective in these partial contractions. But the activity of this corrective cannot be indulged in without disturbing the perfect harmony of the nutrition of the eye and its surrounding tissues. Dr. Martin sees in these contractions the cause of certain inflammatory affections, such as blepharitis, conjunctivitis, phlyctenular keratites, scrofulous keratites, and hordeoli; and other ocular or peri-ocular affections, such as temporal neuralgias, blepharospasms, palpebral cysts, and muscæ volitantes. The relation of cause to effect as established between astigmatism and these affections is: (*a*) By the especial frequency of these affections in astigmatics; (*b*) by the fact, frequently established, of one or several of these affections being reproduced in successive attacks or relapses in the same cases, and always in the same eye—the one affected with astigmatism; (*c*) by the remarkable therapeutic effects produced by drugs which paralyze the ciliary muscle; (*d*) by the protective influence exerted by cylindrical glasses which are perfectly corrected; (*e*) by the fact that corneal astigmatism is replaced (when at fault) by the spasmodic astigmatism, *i. e.*, partial idiopathic ciliary contraction.

In the etiology of these affections astigmatism does not take the place of the general condition. Both exert their influences. The general condition, varying according to individuality, explains partly why the ciliary effect is revealed by these diverse morbid phenomena.

Operation upon a Cyst of the Pancreas.—Gussenbauer (*Archiv für Klin. Chir.*) gives a case of a man 40 years of age who suffered for three months from an affection of the stomach, characterized by

pain, vomiting, and emaciation. On his entrance into the hospital, there was found a tumor in the epigastric region extending to the umbilicus, clearly defined, and diminishing in size transversely from the left costal border to the right lumbar region. The median horizontal diameter reached 18½ centimetres, and the oblique diameter in its greatest length, 22 centimetres. On distending the stomach artificially, the greater curvature and the transverse colon were seen to cover the tumor transversely; these two organs, when the abdominal walls were relaxed, could be displaced from the tumor which followed the movements of respiration. The skin was of a greyish brown. Percussion was dull. Diagnosis: Cyst of the pancreas or left supra-renal capsule.

The operation consisted in fixing the cystic wall to the incised abdominal wall, after separating the colon and greater curvature of the stomach. Then the cyst, held firmly, was partly emptied by the trocar, and afterwards incised. The finger, when introduced into the resulting cavity, removed from the walls of the cyst adherent portions of a blackish-brown mass. In other respects, the walls were smooth; admitting of a penetration into the tissue of the pancreas and a pressing of the posterior cystic wall just over the aorta. The fluid discharged, about 1,900 grammes, contained altered blood, none of the biliary coloring matters, no metalbum, peptone or sugar, but simply ordinary albumen with a body analogous to mucine.

In the course of the second week, masses of a blackish substance, like that removed at the time of the operation, were spontaneously eliminated through the wound. Later the cavity contracted considerably, only secreting a colorless liquid. This liquid gave an alkaline reaction, digested albumen, formed leucine and tyrosine, transformed starch into sugar, and was no other than the pancreatic secretion. The cyst was a true hæmatoma of the pancreas. Twenty-eight days after the operation, the patient left the hospital; a small fistula led into the cavity 3 centimetres in depth; with but a slight secretion.

CONSIDERATIONS ON THE ABLATION OF THE ASTRAGALUS IN THE TREATMENT OF FUNGOUS OSTEO-ARTHRITIS OF THE INSTEP.—Dr. Robert (*Archives gén de Méd.*) in his article on this subject arrives at the following conclusions:

1. A sprain of the foot is frequently followed by chronic osseous lesions, having a great tendency to localize themselves in the astragalus or in the articular surface of the astragalus or calcaneum.

2. These lesions may remain for a long time limited to this region of the tarsus, nevertheless the simple means directed against this osteo-arthritis are often powerless, modifying injections and ignipuncture are equally inefficacious. Gouging, scraping and deep cauterization do not surely reach the full extent of the disease, and sometimes provoke an aggravation which makes amputation necessary.

3. The extraction of the astragalus is an operation which facilitates the exploration of the articular surfaces affected by caries, and permits of a sure removal of the diseased parts. Practiced according to Vogt's method, it is easy of execution, does not produce any serious results, the mortality being slight, gives permanent relief and functional results that are very good.

4. Like all other resections, the ablation of the astragalus should not be attempted in cases of pulmonary consumption, in aged persons, or when the lesions are too extensive.

VOGT'S METHOD OF RESECTION OF THE ASTRAGALUS.—An anterior cutaneous incision is made from the tibio-tarsal articular line on the external border of the extensor communis, and directed longitudinally on the tibio-tarsal articulation and dorsum of the foot to Chopart's articulation. The subcutaneous cellular tissue, aponeurosis, and annular ligament are divided, the tendons of the extensor longus digitorum are separated carefully from the subjacent tissues and held firmly to one side, the extensor brevis d. is incised and drawn to one side upon the external lip of the wound, the external malleolar artery as well as the accompanying veins are divided between two ligatures.

The articular capsule being incised longitudinally as far as possible, the insertions of the capsule and its ligaments are detached on each side by the raspatorium, the head and neck of the astragalus are denuded, the astragalo-scaphoidean ligaments are divided transversely, so as to disengage the anterior part of the astragalus. Now an incision is made from the middle of the anterior longitudinal incision, which is laterally transverse, and in the adult about 10 centimetres long, terminating under the point of the external malleolus, and the soft parts are gradually divided down to the astragalus without interfering with the peroneal tendons.

The foot being forcibly supinated, the peroneo-calcanean ligaments are divided close to the malleolus, and a short-pointed bistoury cuts the ligamentous attachment of the sinus of the tarsus, using also if necessary a delicate pair of scissors.

The astragalus is brought forward in rotating outwards the supinated foot, by seizing the neck of the astragalus with a davier, or by the aid of an elevator placed beneath the bone. A fine pair of scissors introduced between the internal malleolus and the astragalus, cuts the large insertion of the internal lateral ligament to the astragalus; a new traction, effected by pressure, carries the astragalus so forcibly outward that its last attachments to the calcaneum at the posterior astragalo-calcanean articulation can be easily divided.

After the ablation of the astragalus, the whole of the articular cavity is exposed, the synovial membranes can be extirpated, and it is easy to remove all parts of the tibia and calcaneum that may be suspicious. After drainage and suture, the superior surface of the calcaneum adapts itself so exactly to the malleolar surfaces as to leave no cavity.

THE

Journal of American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

SATURDAY, NOVEMBER 15, 1884.

CHOLERA, ITS INCREASE IN PARIS.—We have endeavored to keep the readers of the JOURNAL reasonably well advised concerning the progress of epidemic cholera in Europe, from the time of its outbreak in Toulon to the present time. For a few weeks past the prevalence of the scourge had been diminishing so rapidly, that it was hoped it would not reach the north of France or the more northern countries of Europe, at least, until another summer. But during the last few days it has developed a decided increase in Paris. We say increase because it has been known that some cases have been occurring from time to time in that city since June 20. True, they were called sporadic. But the early and more scattering cases that usher in all epidemics are called sporadic until the later stages of the progress of the disease. According to a Paris telegram of November 8, there had been 160 cases of cholera in that city since June 20, of which 60 had proved fatal. And during the twenty-four hours preceding midnight of the 7th inst. there had occurred 70 new cases and 8 deaths. This official acknowledgment of the existence of the disease and its rapid increase, has checked commerce and travel, and caused much alarm. It is still thought by many that the disease will develop only moderately during the winter, but will become sufficiently planted to cause a full epidemic at the commencement of another summer. This view also gives additional force to the probabilities of its development on this side of the Atlantic at the same time; and should prevent any relaxation of the efforts on the part of municipal authorities, Boards of Health, and citizens, to place every part of our country in the best sanitary condition possible, and to continue it thus throughout the coming year. For the purpose of keeping the profession generally well informed in regard to the prevailing views of the leading sanitarians engaged in active sanitary work in this country, we published in full last week the report of Dr. John H. Rauch to the Conference of the State Boards of Health in St. Louis, and this week we give the recommendations of that Conference, which were also sanctioned by the American Public Health Association, in session at the same time. While we do not regard the "three essential factors" set forth by the Conference as the basis of their recommendations, so fully established as to justify their assertion in a manner so positive and unqualified, yet we think the recommendations are, for the most part, judicious and important. To do our utmost to prevent the importation of infectious diseases of all kinds; to secure pure air, pure water, wholesome food, and universal cleanliness; and to promptly disinfect or destroy the dejecta of cholera patients, whether they contain an infectious microbe or not, is not only calculated to protect the people against epidemics, but also to greatly lessen all the more common endemic and sporadic diseases to which they are ordinarily liable. Hence all the money and zeal expended, in an enlightened effort to accomplish these objects, are well spent; and will directly promote the health, happiness and wealth of the people.

AN IMPORTANT DEMONSTRATION IN MICROBIOLOGY.—Whilst a good number of the profession require no word of caution in reference to the too hasty adoption of theories relative to bacteria as a causative element in the development of disease, yet from the recklessness with which the terms "septic" and "antiseptic," "germs" and "germicides" are used by some writers, the caution-signal is certainly not unnecessary; and experiments published by Dr. C. J. Salomonsen and J. Christmas Dirckinck-Holmfeld, from the Bacteriological Laboratory of Copenhagen, substantiate the value of the admonition. It will be remembered that after a series of experiments, Sattler, of Erlangen, published a statement to show that the active inflammation developed in the eye by the use of jequirity infusion was due to the presence of a bacillus. The exposure of this error as demonstrated by the two observers above mentioned, is detailed in the JOURNAL on p. 613, Col. II, in the domestic correspondence. The position which they sustained has been so ably supported by others and ceded by Sattler, that it is now a settled, demonstrated fact that the inflammation is due to the presence of a ferment

which Messrs. Bruylants and Venneman have called "jequiritine"—which name bids fair to be adopted.

But whilst a certain unanimity relative to the active agent at work in the effects following the use of jequiritine prevailed, there remained unsettled the question of the bacilli, both as to their peculiarities and the part which they play, if any, in the peculiar pathological changes developed in connection with the use of the jequiritine. To make this question clear, it must be understood that two French observers, Messrs. Cornil and Berlioz, took up the experiments of Sattler, and after erroneously corroborating his work, continued their efforts by injecting the jequirity infusion into the subcutaneous tissues of the lower animals. In every well-conducted experiment the bacilli developed extensively in the blood and the animal died. Moreover, blood from frogs which died under these circumstances, injected into other frogs, also produced the development of the bacilli, and the development of the bacilli was followed by death, associated with the usual well-marked pathological changes, namely: subcutaneous œdema, bloody mucus in the alimentary canal, ecchymosed condition of the mucous membranes, and often a sero-sanguineous fluid in the peritoneal cavity. Moreover, it was claimed by Cornil and Berlioz that when the jequirity infusion was filtered with necessary precautions, the injection produced no effect. Hence it was claimed, and with apparent reason, that the bacilli were the active cause of death. To put this question to a crucial test, Salomonsen and Holmfeld continued their studies, the results of which demonstrated that the bacilli, in themselves, have nothing whatever to do with the cessation of life nor with the pathological changes which accompany it.

Several investigators have made observations which show that on the injection of the *jequirity infusion* into the tissues death follows, and that bacilli are present in the animals thus treated; and Bruylants and Vennemann have shown that when the ferment *jequiritine* is used with frogs death follows in a similar way, but no bacilli are found in the blood or tissues, and concluded therefrom that the frogs were killed by the poisonous ferment alone. S. and H., however, undertook to develop the question as to what the bacilli have to do with the subject, and consequently used in their observations not the jequiritine which B. and V. used, but the infusion which Cornil and Berlioz used. By following the same methods, namely, the injection into the dorsal lymphsac of two drops of a two per cent. infusion, or a very minute drop of a four per cent. infusion, after a gradual muscular weakness, death followed with the characteristic pathological changes above described.

It was found, however, that the bacteria developed varied greatly both in quantity and kind, and, whilst the peculiar bacillus described by Sattler was almost always dominant, several other well-marked varieties were present. It is impossible to follow these experimenters through their whole investigation, which is published in B. 2. No. 19 of the *Fortschritte der Medicin;* we must not omit to say, however, that they cultivated these bacteria from the blood of the frog, and injected them in large quantities into the dorsal lymphsac, and kept watch of them for an indefinite time, and could not perceive that they suffered any inconvenience from the injection. Thinking it might be possible that by the culture on gelatine the bacteria might have lost their virulence, they injected the blood taken directly from the frogs affected. In these instances also, although a relatively large quantity was used, no result followed. In this respect their observations differed from those of the French observers; and they stated their position thus: That frogs subjected to an hypodermic injection of jequiritine die from the effects of the poison with a secondary development of non-virulent bacteria.

To test the question as to whether the bacteria were introduced with the poison, they took several samples of sterilized jequirity infusion and sowed in them different bacteria—the jequirity bacillus, micrococcus prodigiosus, bacillus cyanogenus, and a colorless micrococcus; and after, with due care, demonstrating their pure culture, injected the jequirity infusion thus infected into various frogs, and were rewarded by finding that what they had sown they could now reap in the blood of the various frogs upon which they had experimented.

But the curious and interesting fact is that, unless the frog is subjected to the jequirity poison, these bacteria will not thrive in the blood, and thus it is that the jequiritine in this instance supplies or develops the predisposition for the bacterial invasion. Bacteria injected without the jequiritine diminish and become extinct. After the injection of a large quantity, some few individual germs are found for some weeks, but they also soon disappear.

Contrary to the observations of Salomonsen, Cornil and Berlioz found that the blood of the frogs affected with the jequirity was poisonous to other frogs. Salomonsen has shown this to be the case only when a large quantity of the poison is used with the first frogs, so that the poison when diluted with the affected frog's blood is still strong enough to be

fatal to a second frog. The control experiments were made in this case by showing that when the blood in question was capable of developing the characteristic jequirity inflammation in the eye it was also capable of developing the characteristic poisoning, and when it was not capable of developing the inflammation of the eye it was not capable of poisoning. The explanation given by Dr. Salomonsen why C. and B. did not get any manifestation of poisoning after filtering the jequirity infusion by special precaution, is the possibility that in filtering out the bacteria they also filtered out the poison in question.

This infection of the organism with bacteria, which are in themselves innocuous, Dr. Salomonsen calls a pseudo-infection, which may readily be mistaken for a true infection. Such developments will certainly cultivate caution.

"Aural Thermometry."—Under this title the *Medical Record*, of Nov. 1, 1884, makes mention of a series of experiments conducted by Dr. Flitner, and by him detailed in the *St. Petersburger Dissertation.* By means of a thermometer adapted to the purpose he measured the temperature of the external auditory meatus in health and acute and chronic diseases of the ear. The average temperature in health was discovered to be 98.4° F., while that of the rectum and axilla was about 99° F. Dr. Flitner has drawn the following conclusions: 1. That if the temperature of the meatus be measured daily in the course of acute inflammation of the ear, it will be found to bear a constant uniform relation to that of the system at large. 2. The same may be said when pneumonitis, erysipelas and other acute inflammatory affections complicate the aural disorder. 3. The temperature of the meatus is sometimes higher than that of the rectum, in cases where the affection of the ear is accompanied by morbid processes either of the interior or exterior of the cranium, phlebitis of the sinuses, caries, erysipelas, etc. Hence a more reliable indication as to the progress of the cranial affections may be received from the temperature of the auditory canal than from that of the axilla or rectum, and should be preferred to the latter.

This line of investigation is original, and appears to us to deserve further research. If Dr. Flitner's conclusions shall be substantiated, "Aural Thermometry" will prove a valuable addition to our means of diagnosis. Why may it not be found in future a reliable method of detecting, at their outset, obscure inflammatory processes within the cranial cavity.

Domestic Correspondence.—We cheerfully give place to the letter of Dr. Wilder, of San Francisco, although we fail to see wherein our reviewer was in any measure incorrect in his representation of the paper alluded to. His remark that "no examination can positively determine a man's fitness to be a practitioner," was by no means intended to imply that all examinations are useless, but rather that it is only one of several tests that are necessary to determine a man's fitness for performing the responsible duties of professional life.

Our correspondent in West Virginia will receive proper attention next week.

New York State Medical Association.—As we stated in a previous number, this important organization will hold its annual meeting in New York City, commencing on the 18th inst. and continuing four days. We have assurances that the meeting will be numerously attended and its proceedings full of interest.

The Law Regulating the Practice of Medicine in West Virginia has been decided by the Court of Appeals of that State to be "constitutional and valid." The opinion of the court was delivered by Judge Green on the 1st inst., and is an able review of the questions involved.

A Medical Centenarian.—Dr. Christopher Columbus Graham, of Louisville, Kentucky, recently celebrated his *hundredth birthday* in the enjoyment of a banquet tendered to him by his neighbors.

The eminent professor, Luigi Somma, of Naples, fell at his post of professional duty a victim to the cholera epidemic, on the 19th of September, 1884.

SOCIETY PROCEEDINGS.

AMERICAN ACADEMY OF MEDICINE—NINTH ANNUAL SESSION, HELD IN HOPKINS HALL, BALTIMORE, OCTOBER 28 AND 29, 1884.

The Academy convened at 3 o'clock in the afternoon with President Benjamin Lee, of Philadelphia, in the chair, and was opened with prayer by the Rev. Dr. Grammar, of Baltimore.

The minutes of the last meeting and the report of Council were read and approved.

The following gentlemen were recommended for election by the Council, and upon ballot were duly elected:

Drs. J. H. Baxter, Chief Medical Purveyor U. S. A., Washington, D. C.; Geo. W. Miles, Perryville, N. Y.; A. B. Tadlock, Knoxville, Tenn.; Eugene E. Barnum, Waterport, N. Y.; C. W. Stevens, Boston, Mass.; John A. Robinson, Chicago, Ill.; J. L. Miner, Wilkesbarre, Pa.; H. A. Johnson, Chicago, Ill.; F. S. Johnson, Chicago, Ill.; J. W. Holland, Louisville, Ky.; H. J. C. Wilson, Baltimore, Md.; W. W. Jaggard, Chicago, Ill.; Charles Warren, Washington, D. C.; J. N. Hyde, Chicago; Ira B. Reade, New York; L. S. McMurtry, Danville, Ky.; E. O. Shakespeare, Philadelphia; Douglas Morton, Louisville; M. P. Hatfield, Chicago; T. E. McArdle, Washington; S. M. Free, Dagus Mines, Pa.; F. R. Graham, Chester, Pa.; W. P. Watson, Jersey City, N. J.; J. G. Young, Philadelphia; Joseph Coblenz, Baltimore; J. S. Green, Elizabeth, N. J.; J. M. Stevenson, Pittsburg, Pa.; David Bockes, New York; E. L. Keyes, New York; E. Andrews, Chicago: E. W. Andrews, Chicago; C. Kollock, Cheraw, S. C.; W. Murray Weidman, Reading, Pa.; T. C. Stellwagon, Philadelphia; M. E. Wordin, Bridgeport, Conn.; G. R, Morehouse, Philadelphia; E. Cowles, Somerville. Mass.; F. H. Davenport, Boston; E. O. Otis, Boston; T. J. Turner, Navy Dept., Washington; T. B. Brune, Baltimore.

Drs. Bulkley, Steiner and Bombaugh were appointed a Committee on Nomination.

The first paper of the afternoon was by Peter D. Keyser, M.D., of Philadelphia, entitled "The Relation of the Medical Colleges to Preliminary Education." This relationship was deduced from the statements made by the various colleges in their announcements, and examining these statements and the method of their execution, it appeared that but comparatively few of the 91 medical colleges made any pretence to any real educational requirement, and even among these few, many did not rigidly enforce their own requirements.

"The Examination of Applicants for License to Practice, a means of Raising the Standard of Medical Education," was the title of the next paper, presented by Edward Jackson, M.D., of Philadelphia. A medical college resembles very much a human being in that what it is, depends upon first, its inherent tendencies, and secondly, the surrounding influences. The attempts that of late have been made to raise the standard of medicine, have been to direct the former condition and develop from within. But a great aid would be given if the surrounding conditions were changed. Every college graduates students of all classes, so that a diploma does not possess an equal guarantee of the ability of its possessor to practice the healing art. The need is not to guard so much against colleges as it is to guard against individuals. This can only be accomplished by an independent Board of Examiners in each State. When this is brought about, and the certificate of this Board will be the only license to practice, another factor will be introduced, which will cause that medical Faculty to be most popular whose students more uniformly pass the Board examination, hence a need on the part of medical teachers imparting more thoroughly and examining more carefully before giving their diplomas.

Henry O. Marcy, M.D., of Boston, was the author of the third paper of the afternoon, entitled "The Role of Bacteria in Infectious Diseases," which paper will appear in full in our columns.

"The Trade Aspect of Medicine," by Albert L. Gihon, M.D., Medical Director U. S. N., was the next paper. The object of the paper was to show the great tendency of the times to belittle the profession of medicine to a trade in medicine, to show the meanness in so doing, and to suggest a better way. The author insisted that the men who look at the practice of medicine only as a means of collecting a fee, whose sole aim is to increase the size of one's practice and thereby one's income, who deal in the methods of the shops, ought not to be included among the profession, and if they desire to retain the methods of tradesmen should be so classified. The remedy for this condition rests solely with the profession themselves, who first ought to cast several beams out of their own eyes. Physicians should be ready to say, "I do not know what is the matter with you, and I will not prescribe until I do know;" to frankly say that there is nothing the matter, or that drugs will not cure, to prescribe freely hygienic methods and drugs less, even though it does involve a loss of fees, when it is for the best good of the patient. But the question was raised, how shall one live by the avocation of medicine? The essayist would largely increase the number of hospitals, dispensaries, etc., for the free treatment of all who were unable to pay the fees. But while the treatment should be free, the physicians in charge should receive a competent salary. Instead of, as at present, a young man putting out his sign and waiting for patients, he would be placed in a hospital with a salary sufficiently large to support him, where he would work under instruction.

By this means not only would better work be done, but an opportunity offered for the collection of statistics of disease, a thing now nearly impossible. Then in a short time there will be a demand for sanitary inspectors in every city in the land, where an opportunity will be given for the employment of many. Even now, if the fines were collected for the violation of the existing sanitary laws, they would suffice for an efficient sanitary service. Dr. Gihon thought the position of family physician would be a much more honorable one, if he were salaried as sanitary adviser of the family, and not to depend for fees upon the presence or not of sickness in the family, and thus have his income depend upon the size of his clientage, and not the amount of sickness.

This was the last paper for the afternoon, the Academy going into executive session, when a resolution was adopted that a committee of two should be appointed in each State where the Academy has Fellows, for the purpose of suggesting and furthering the appointment of State Examining Boards independent of the colleges.

EVENING SESSION.

The Academy assembled in the evening for the purpose of listening to the President's annual address —Vice-President Gihon presiding. Dr. Lee selected

for his subject "Differentiation the Test of Civilization: The Specialist and his Education." He alluded to the earlier medical history of Maryland, quoting from its annals "1805, June Medical and Chirurgical Faculty meeting, Faculty endorse vaccination, Faculty agree to license oculists if competent." From which is seen that Maryland early recognized specialists, and that they adopted competency as the qualification to practice. When a nation grows from barbarism towards civilization, there is a marked increase in the division of labor. There is a differentiation, and the many do in parts that which formerly the one did in entirety.

In the learned professions the same process has been going on but it has met opposition. In this country more than in Europe medicine is expansive, while law and theology are fixed sciences, so if anywhere differentiation should be working, it would be in medicine, but here it meets probably the greatest opposition. The arguments of both sides were presented—on the one hand those opposed to the practice of specialties urge: First, that a multiplication of specialties has a narrowing effect upon the doctor. Secondly, it degrades the profession, and third, it is not best for the patient. On the other hand the upholders of specialties say, that specialism is nothing new—indeed, medicine is in itself a specialty, theology and medicine having of old but a single exponent. Then if one recognizes the physician and surgeon, obstetrician or alienist, why not go further. Again, the field of medicine is too vast to be gone over by one man, and if all attempted so to do we should all sink to the dead level of mediocrity. If, on the other hand, one finds enough to employ his mind in a single branch, he then becomes a specialist. The complexity of modern life demands specialism, here as elsewhere differentiation is a test of civilization. The defense calls witnesses and asks if there have not been important contributions to medical knowledge by the specialists. So that with Gamaliel one feels like saying let them alone, for if they be of man, that is if the distinction is forced and unnatural, they will come to naught, but if they be of God, that is of a legitimate natural growth really required by the times, who can prevent them.

It seems clear that the specialist has come, and he has come to stay. Look at the catalogue of any of the great medical colleges twenty-five years ago, and compare it with that of to-day; and observe the great increase in the number of specialist teachers, in branches distinctively special; whether we think of him as the product of a degenerate race, or as the flower of the profession, we ought to make the best of it.

What shall he be—a physician and something more? or something less than a physician? He has need for a broad education in direct proportion to the narrowness of his work. The consciousness of the self-dwarfing is not a pleasant one, so that he should have that foundation that will prevent it. He should even have a higher standard of preliminary training, but as many do not begin to be specialists, can only say that there be no lowering. This Academy will not be willing to adopt the assertion of one of the prominent medical colleges: "The student is presumed to have sufficient medical knowledge." A medical specialist should be first of all a man of culture. Having made up his mind to study medicine, should he stop without studying all of medicine? Assuredly not, for the part that he will treat is but a part of a whole, intimately associated with each other and a knowledge of all is necessary to a study of any. With one exception he ought to have all of the old seven, and that exception is obstetrics, because it is itself a specialty. Having the foundation, then comes the superstructure, whether in Alma Mater or polyclinic, a special degree or license. One thing is apt to be overlooked. Specialists are apt to see and treat disease in chronic forms, which are but the outcome of acute forms of disease, and the specialist should have an opportunity for the study of diseases in the acute form, hence an experience in a general hospital is greatly to be desired.

Such an one will not threaten the profession. He concluded with a brief tribute to Fellows who had died during the year—Dr. F. D. Lente, ex-President of the Academy; Elisha Harris, Secretary of the New York State Board of Health, and Surgeon General Crane, of the Army; and the honorary members Drs. S. D. Gross and J. Marion Sims.

After the address the Academy sat down to its annual collation in the Athenæum Club, having a very pleasant social time.

WEDNESDAY MORNING SESSION.

The Council recommended the election of Drs. George M. Sternberg, U. S. A., and Oliver Wendell Holmes, of Boston, to honorary membership, and the following additional gentlemen to fellowship:

Drs. R. J. Lewis, Philadelphia; J. W. Kerr, York, Pa.; Alex. Hadden, New York; J. D. Kelley, Utica, New York, making 45 in all.

They also presented a series of amendments to the constitution and by-laws looking toward another class of members, associates, who shall consist of those who have attained distinction in medicine and the collateral sciences and do not possess the degree in arts, the qualification of a Fellow. These lay over until the next session under the rules.

The following resolution was also adopted:

Resolved, That the American Academy of Medicine recognizes in the recent munificent gift of W. H. Vanderbilt to the College of Physicians and Surgeons of New York, a most important and valuable service to the science of medicine in America.

That in this spirit the Academy tenders to Mr. Vanderbilt its obligations with the assurance that in no better way could the higher education of our profession and the benefit of humanity be promoted.

The nominating committee reported the following suggestions for officers for the ensuing year:

President, Albert L. Gihon, M.D., U. S. Navy.

Vice-Presidents, R. Stansbury Sutton, M.D., of Pittsburg; Jas. A. Stewart, M.D., of Baltimore; William Elmer, M.D., of Bridgeton, N. J.; J. Cheston Morris, M.D., of Philadelphia.

Secretary and Treasurer, R. J. Dunglison, M.D., of Philadelphia.

Assistant Secretary, Charles McIntire, Jr., M.D., of Easton, Pa.

The report was received and the gentlemen elected.

The first paper of the morning was by R. D. Rockwell, M.D., of New York, on "The Induction Coil; Its Varieties and the Differential Indications for their Use."

Two kinds of electro-magnetic machines are in use by the medical profession, the separate coil and the continuous. By means of diagrams the construction and principle of each were explained. The essayist devoted the greater part of the paper to the therapeutical use of the second class or continuous coil machine. While it is possible to have no less than ten combinations of current, after much experience and careful observation he has concluded that three of these will do the work of the ten.

First, the current obtained from the primary coil, of large quantity and small tension. It is of considerable power, will burn iron and electroplate. It has but slight contractile power upon the muscles in health, but in some pathological conditions will produce muscular contractions far exceeding those brought about by the stronger induction coils. It is of benefit in true neuralgic pains about the head. In cases of asthenopia the tired eye is often relieved and by its continuous use strengthened, it will also frequently remove muscæ volitantes.

Second, a combination of the primary with the first and second induction coils. This gives a current both peculiar and unique. It will electroplate, but will not burn iron. It has the maximum power to contract muscles, each additional coil giving decreased contractility. The current is harsh, sharp and cutting in character, and is of use when a powerful impression is required; hence in not a few cases of paralysis where the response to the galvanic current is perfect, but where there is a diminution of the faradomuscular contractility, this current is better than any other. While in superficial forms of anæsthesia it may be in no way superior to other forms, it is to be preferred in certain persistent forms of lost or perverted sensibility.

Third, the primary in connection with all three induction coils. A very interesting and important combination is made, tonic and sedative in character. The range is wider than the others, and is of use in general faradization. The best constitutional effects are brought about by this form, and it aids in relieving that host of symptoms gathered together in general neurasthenia. The action on the motor and sentient nerves is less severe, and its general effects are more agreeable.

"Some Comparative Results of Treatment of Chronic Articular Osteitis of the Hips," by Dr. P. Gibney, M.D., of New York, was read by title and referred to Council.

L. C. Bombaugh, M.D., of Baltimore, read the next paper, entitled "The Place of the Physician in Literature." This place is a two-fold one—an active and passive condition; the physician may write or be written about. The passive state was the only one to be treated of in the paper. He quoted freely from authors of all ages and climes, showing the esteem or lack of it in which the profession was held. He analyzed the motives of the writers, and traced out the real drift and relative worth of their criticism and irony. The attack upon quacks was upon those in high places, and if the profession had but more carefully examined into many of these attacks, and found that they were but mirrors held up to nature, have laughed with the people, but profited by the caricature, they would have more quickly pruned many of the excrescences; and to-day as well as for the future, if to-morrow is to be as to-day, there is ample opportunity for other Molieres if "machine-made doctors who have no aspirations beyond the trade aspect are to be assigned a share in the work of filling the gaps in preventive medicine and sanitary science, of making nearer approaches to infallibility in our etiology, of developing knowledge of micro-organisms, of probing the depths of hereditary and constitutional taint, of strengthening expert testimony in medical jurisprudence, of inquiring into new types of disease occasioned by new forms of manufacturing industry, of introducing improved remedial measures and demonstrating their efficiency, of learning more of climatology and the geographical distribution of disease, of hastening the removal of the *opprobria medicorum*, and so on to the end of the long, long chapter."

"Observations in One Hundred and Thirty-seven Abdominal Sections," was the title of a paper by R. S. Sutton, M.D., of Pittsburg. The cases upon which these observations were founded were operated on by various operators in America and Europe, twenty-nine of them being by myself, comprising the various forms of abdominal section. Cases for McDowel's operation are, as a rule, a comparatively poor class of patients, and in the United States the rule has been to operate after the health of the patient has been broken and at her home. In England, Scotland and Germany, early ovariotomy in a special hospital is recommended, while in Austria the cases are farther advanced, and the operation made in the general hospital, and the results obtained are not so good. There is a time in every ovarian tumor when there are no adhesions and the operation almost without danger. If by neglect of the patient or bad medical practice, she is treated with the trocar and persuaded to wait until death stares her in the face before operating, the risks are greatly increased. He has been gradually approaching the following conclusions:

First. Nearly all cases of ovarian cystomata recover if operated on early and under proper precautions.

Second. A very large number of cases of ovarian cystomata die if operated on in their own homes under ordinary precautions.

Third. That simple cases and a well regulated special institution for the work will always be the mainspring of success in McDowel's operation.

An ovariotomy done early may be considered one of the easiest of surgical operations, but a neglected case is a very different affair. After the completion of the operation it is most important to leave the cavity of the peritonæum dry. As a rule, the younger subjects do best, but the elder subjects bear the oper-

ation well. Climatic influence has very little effect. The details of antiseptic precautions need not be taken, but thorough cleanliness must be insisted upon. The methods of operating differ very much; the simpler methods are preferable. The prevention of the loss of blood is of the greatest importance. In supra-vaginal hysterectomy the question of the disposition of the pedicle is still *sub judice*. Where a cyst is multilocular a trocar should be used, and as the cysts are emptied the abdomen should be filled with warm sponges that the intestines may be protected from chill. Adhesions are best treated by ligation and division with Paquelin's cautery. The best super-dressing after hysterectomy with the stump outside is iodoform gauze. Drainage in intra-abdominal operations should only be resorted to in cases when it is not certain that the bleeding is all arrested; where many adhesions were divided without the cautery, and when the peritonæum is so irritated that it is almost certain to throw off much serum.

At the conclusion of Dr. Sutton's paper the Academy took a recess and visited the very handsomely equipped chemical and biological laboratory of Johns Hopkins University.

Upon reconvening there was a spirited discussion upon Dr. Sutton's paper, participated in by Drs. J. Tabor Johnson, of Washington; E. H. M. Sell, of New York; H. O. Marcy, of Boston; and H. J. C. Wilson, of Baltimore. The views of the essayist were generally agreed to, the chief exception being that an operator should never refuse to operate no matter how desperate the case. The discussion was closed by Dr. Sutton.

The last paper of the session was by L. Duncan Bulkley, of New York, entitled, "Specialties and their Relation to the Medical Profession. The following conclusions were reached:

1. The science and practice of medicine is so vast that it is beyond the power of one mind to grapple with it all.

2. Divisions of study and of practice have unconsciously been made.

3. Specialists are those who devote excessive attention to their branches.

4. By the development of these they have increased the scope of medical knowledge.

5. Everyone should be more or less a specialist, in that he should know or do some one thing better than another.

6. Specialists should have a thorough training in general medicine in addition to their special preparation.

7. Specialties will limit themselves by the law of supply and demand, and by the increase of the teaching of special branches in the medical schools, thereby giving the general practitioner greater knowledge in these departments.

Drs. Herman Knapp, and F. M. L. Chrystie, of New York, were prevented from attending the meeting. Dr. Nathan Allan's paper on "Physiology in Its more Public Relations," was read by title and referred to Council.

The report of the standing committee on "Laws Regulating the Practice of Medicine," showed such regulation in one State, Virginia, since the last meeting.

Dr. Lee, the retiring President, made a short valedictory address, and introduced the President-elect, Medical Director A. L. Gihon, who made a short salutatory.

The President appointed Drs. L. Duncan Bulkley and E. H. M. Sell additional members of Council.

Votes of thanks were tendered to the retiring President for his efficiency and the authorities of Johns Hopkins University for their courtesy. The Academy then adjourned to meet in New York in 1885.

After adjournment many of the Fellows visited the Johns Hopkins Hospital under the guidance of Dr. J. S. Billings.

CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTOLOGY.

JUNE 9, 1884.

The society convened as usual in the parlors of the Illinois Charitable Eye and Ear Infirmary. The following gentlemen were proposed for membership: Dr. Ira Marshall, Dr. Casselberry, Dr. W. H. Fitch.

Dr. Holmes made a verbal report of an interesting case in which, two months after a very successful extraction of cataract, he divided extremely delicate capsular remains with a Knapp's needle knife. The patient was much elated at the great improvement of her sight.

After a few days the patient complained of irritation, although she had been confined to her room constantly and to her bed four days. The eye had been under the influence of atropine and boracic acid. The conjunctiva especially of the lids was red. A small mass of mucus (?) was found on the edge of the lower lid and adherent to the globe. On the removal of this collection it was observed that a minute filament extended from the needle puncture down over the cornea. There had been no pain. On the eighth day vision had not suffered. More or less pain soon followed with slight increase of tension. Eserine was substituted for the atropine.

It was observed that a very fine thread-like opacity extended into the vitreous. In a few days the vitreous became more and more cloudy, the conjunctiva red and œdematous and the eye painful. In a week more the patient was unable to count fingers.

The reporter was inclined to believe that the inflammation was not caused primarily by the injury of the intra-ocular tissue, but secondarily by the entrance of germs through the puncture from the *minute prolapse of vitreous*.[1]

After the conclusion of these remarks, Dr. Holmes invited the members to repair to the patient's room and examine the case at their leisure. The case was discussed at length. Owing to the great interest attached to it, Dr. Holmes was requested by a vote of the society to prepare a paper on his experience in secondary operations for cataract.

[1] We have since learned that the patient has greatly improved in all respects. Her sight especially is now quite good.

Dr. E. J. Gardiner read an exhaustive paper on "Boracic Acid in Ocular Therapeutics." No further mention is made of it here as it will soon appear at length.

AUGUST 12, 1884.

Drs. Marshall, Casselberry and W. H. Fitch were elected to membership.

Dr. Hotz presented a pathological specimen, with the following history: Mary S., aged 4, was first examined August 1, 1884. About ten days previously, without injury or any other manifest cause, the left eyeball became violently inflamed. She slept well, and never complained of pain. One or two days before her visit to the doctor's office the patient was apparently sick; she had no appetite, and no desire to play as usual.

Before this inflammation set in, the left eye had the same appearance as the right. The following changes were noted by Dr. Hotz, August 1: Intense episcleral injection, interstitial haziness of cornea, retraction of iris in consequence of which the anterior chamber was abnormally deep. Pupil invisible, three-quarters of the anterior chamber being filled with a grayish white substance.

Aug. 11, upper anterior portion of sclerotic discolored and distended (staphylomatous); injection of eyeball more intense; condition of cornea the same; anterior chamber filled entirely with the grayish white substance. The eyeball was enucleated and at once opened by a meridional section. Vitreous appeared wine-colored and cloudy in its anterior half, the cloudiness being most dense near the region of the ciliary processes and anterior limitans, which appeared densely white. Lens intact; pupil contracted; anterior chamber filled with a whitish red vascular substance 2 mm. thick; it cannot be separated and distinguished from the iris tissue, and is firmly coherent with the posterior surface of the cornea. At the corneo-scleral margin the anatomical boundaries of the various tissues are lost; all blend with the mass, which has invaded cornea, sclera and ciliary body.

There is no trace of ciliary processes. The surface from ora serrata to pupil is perfectly flat and smooth. The posterior part of the eye has a normal appearance. The doctor expressed the opinion that the growth might prove to be a so-called granuloma on microscopic examination.

Dr. Boerne Bettman then read a paper on Amaurosis following Hæmorrhage. The two cases cited offered certain symptoms which, according to the doctor's opinion, pointed to a common cause, namely, to intracranial hæmorrhage with subsequent alterations of the optic nerves. The first case, Margaret Feth, æt. 24, was admitted into the Eye clinic of Heidelberg in 1879. She is of healthy parentage. Patient had repeated attacks of convulsions up to her fifth year. Several brothers and sisters, seven in all, died a few months after birth from the effects of convulsions. Miss F. was a healthy, well-nourished child. Menstruation set in at the age of 16. On the 17th of May, 1879, while at home, she suddenly experienced severe pain on the left side of her head, accompanied by dizziness and severe spells of vomiting. The pain increased during the night. A physician was hastily summoned; he prescribed powders which apparently intensified the nausea and emesis. On the 21st, a second attack of sudden dizziness came on while in bed. She became unconscious, and remained in this condition 24 hours. While in this state, a large quantity of dark-colored blood was seen to well from her mouth by her parents. On coming to her senses, everything appeared dark about her. Investigation showed her to be perfectly blind. Sight returned to the right eye during the course of the day. A third attack of unconsciousness followed a few days afterward, leaving the sight of the right eye very much impaired. On the day of admission into the clinic there was complete amaurosis. Both pupils were dilated *ad maximum*. Irides did not respond to light. The ophthalmoscope revealed pronounced atrophy of both discs. Treatment of all varieties proved of no avail.

The second case was that of a boy, George Dohl, æt. 3. The child fell against a chair, striking the upper teeth. The gums bled for three days, followed by severe convulsions which lasted fully 48 hours. After the first 24 hours, during an interval of consciousness, the parents noticed that the child had lost sight in both eyes.

Ten days after the injury the child presented the following appearance: Pale, weak-looking boy; pupils dilated *ad maximum;* reaction to light prompt; media both eyes clear; papillæ very anæmic, almost perfectly white; caliber of arteries somewhat diminished; veins perhaps somewhat dilated; amaurosis. The prognosis was unfavorable. Particular pains was taken to call the attention of the parents to one favorable feature of the case, the prompt reaction of the irides, which was interpreted as a sign of partial restoration of vision. Sight gradually returned sufficiently to enable the child to roam about the house. Eight weeks after the accident a second attack of convulsions ended fatally. The various theories of Graefe, Sammelsohn and Leber were then discussed.

The next paper was by Dr. Jefferson Bettman, entitled "Fracture of Base of Skull with Complication of Vago-Accessory Nerves."[1]

Dr. Holmes made a verbal report of an unusual case of upward strabismus. A boy, 13 years of age, had suffered from very early childhood from a peculiar turn of the right eye upward, which occurred about every half minute. There was not a quick spasmodic motion as in chorea, but a slow movement as in certain cases of convergent strabismus. During the contraction of the levator superioris more than three-quarters of the cornea was concealed under the upper lid; the vision with $-^{1}/_{48}$ cyl. 90° was normal. Neither by the use of prisms or any other means could diplopia be induced. A division of the superior rectus almost absolutely relieved the annoying action of the muscle. At the end of three months the patient reported no return of the anomaly.

BOERNE BETTMAN,
Secretary.

[1]This case will be found in full in the department for Original Articles.

REGULAR MEETING OF THE CHICAGO GYNÆCOLOGICAL SOCIETY, OCT. 31, 1884.

In conformity with an ancient custom, the members of the Society met at the residence (271 Michigan Ave.) of the retiring President, Dr. A. Reeves Jackson, and were entertained by an elegant and elaborate banquet. After the banquet, the President called the meeting to order. The following officers for the ensuing year were elected:

President, Dr. H. P. Merriman; 1st Vice-President, Dr. E. C. Dudley; 2d Vice-President, Dr. Charles Warrington Earle; Secretary and Treasurer, Dr. Edward Warren Sawyer; Editor, Dr. W. W. Jaggard.

After an appropriate address by the retiring President, the Society adjourned to meet Friday, Nov. 21, at the residence of Dr. C. W. Earle, 535 Washington Boulevard, Dr. Edward Warren Sawyer to open the discussion of "The Premature Expulsion of the Ovum." W. W. J., Editor.

2330 Indiana Ave., Chicago, Ill.

STATE MEDICINE.

HEALTH IN MICHIGAN, OCT., 1884.

Reports to the State Board of Health, Lansing, by observers in different parts of the State, show the diseases which caused most sickness in Michigan during the month of October (5 weeks ending Nov. 1), 1884, as follows:

Number of Weekly Reports Received, 225.		For Preceding Month.
Diseases Arranged in Order of Greatest Prevalence.	Per Cent. of Reports Stating Presence of Disease.	Per Cent. of Reports Stating Presence of Disease.
Diarrhœa	75	88
Intermittent fever	72	84
Rheumatism	67	61
Neuralgia	64	57
Consumption of lungs	60	62
Bronchitis	56	44
Remittent fever	52	59
Dysentery	44	56
Tonsillitis	44	31
Influenza	37	24
Typho-malarial fever	36	27
Cholera morbus	31	62
Erysipelas	28	22
Cholera infantum	28	51
Typhoid fever (Enteric)	25	15
Pneumonia	22	13
Diphtheria	22	19
Inflammation of bowels	22	21
Inflammation of kidney	22	18
Whooping-cough	16	22
Scarlet fever	9	11
Inflammation of brain	8	8
Membranous croup	8	3
Cerebro-spinal meningitis	7	5
Measles	6	10
Puerperal fever	5	6

For the month of October, 1884, compared with preceding month, the reports indicate that influenza, tonsilitis, bronchitis, typhoid (enteric) fever, pneumonia, typho-malarial fever, and neuralgia increased, and that cholera morbus, cholera infantum, diarrhœa, dysentery, intermittent fever, and remittent fever decreased in prevalence.

Compared with the average for the month of October in the six years, 1879–1884, dysentery, diarrhœa, cholera infantum, and cholera morbus were more prevalent, and intermittent fever and typho-malarial fever were less prevalent in the month of October, 1884.

For the month of October, 1884, compared with the average of corresponding months for the six years, 1879–1884, the temperature was slightly higher, the absolute humidity and the night ozone were slightly more, and the relative humidity and the day ozone were slightly less.

Including reports by regular observers and others, diphtheria was reported in Michigan in the month of October, 1884, at 40 places, namely—Armada, Ann Arbor, Adrian, Albion, Big Rapids, Coldwater, Charlevoix, Detroit, Douglas, Edmore, East Saginaw, Fowlerville, Garfield, Grand Haven, Grand Rapids, Handy, Houghton, Hastings, Hartford, Howard City, Kalamazoo, Lyons, Port Austin, Lansing, Leelanaw, Marcellus, Muskegon, Meredith, Mendon, Manistee, Northport, New Buffalo, New Haven, Port Huron, Reynolds, Romeo, Sand Lake, Springwells, Wyandotte, Whitehall; scarlet fever at 19 places—Burr Oak, Coldwater, Columbiaville, Cadillac, Detroit, East Saginaw, Grand Rapids, Ishpeming, Jasper, Kalamazoo, Leelanaw, Manistee, Muskegon, Portland, Vicksburg, Wyandotte, Albion, Cedar Plains, Roxand; and measles at 6 places—Detroit, Cadillac, Ithaca, Marcellus, Whitehall and Wyandotte. HENRY B. BAKER, Sec.

Lansing, Nov. 7, 1884.

REPORT ON THE PREVENTION OF EPIDEMIC CHOLERA IN AMERICA.

[Adopted by the American Public Health Association and the Conference of the State Boards of Health.]

TO THE CONFERENCE OF STATE BOARDS OF HEALTH:

Mr. President and Members:—Your committee, to whom was referred papers relating to the practical work required for the prevention of epidemic cholera in this country, respectfully report as follows:

ORIGIN AND DISSEMINATION.

There are three essential factors to the prevalence of cholera in this country as an epidemic,— (1) the importation of the disease by means of ships more or less directly from its only place of origin in India; (2) local unsanitary conditions favorable to the reception and development of the disease; (3) persons sick with the disease in some of its stages, or things infected by such sick persons, to carry it from place to place. These three factors naturally suggest the methods of combating the disease, for which there is needed practical work,—international, national, and inter-state, state, and local. So far as relates to state and local boards of health, their organization and activities are greater than ever before; but it must be admitted, that after cholera has been introduced into a country, inland quarantines are not easily

and successfully maintained, although efforts in this direction are then advisable.

In view of the threatened introduction of cholera into this country during the coming year, and the consequent immense waste of life and property values through derangements of commerce, trade, and productive industries, it is the sense of this conference that the general government should maintain such a national health service as shall, by rigid inspection at the port of embarkation, question the freedom from disease and infection of all persons and things from infected districts, and shall secure the surveillance of such persons and things while on shipboard, and, when necessary, detention at quarantine stations on this side for treatment and disinfection.

OFFICIAL INSPECTION.

In view of the present threatening aspect of Asiatic cholera, and the constant danger from other communicable diseases occurring at foreign ports having commercial relations with the United States, we urge upon congress to provide for the appointment and maintenance at all such foreign ports where cholera, yellow fever, plague, small-pox, or scarlet fever exists, or are liable to exist, of medical officers of health, the same being either accredited consuls, or attached to the consulates. The duties of these officers shall be to give notice, by telegraph when practicable, of the existence or appearance of any of the above named diseases to some constituted authority in this country; to give notice of the departure of any vessel known or suspected to be infected for any port in the United States; and, whenever requested by the master of any vessel about to load or leave for this country, to inspect thoroughly such vessel in all her parts, and also her cargo, her crew and passengers, to use such cleansing and disinfection as he may deem necessary, and to satisfy himself that all persons about to sail are free from dangerous communicable diseases, are not recently from infected places, and are properly protected from small-pox, giving to her commander a certificate of the inspection, and of all precautionary measures taken. And it shall be the duty of the central authority in this country promptly to transmit intelligence of the existence of the above mentioned diseases at foreign ports and places, and of the departure of dangerous vessels for the United States and Canada, to all state and local health authorities in the country which may be interested in the same.

We further recommend, in case of those foreign ports which have no consular agents of this country or no telegraphic communication with this country, and which are liable to transmit pestilence through commercial intercourse, that one or more medical officers be chosen to visit such ports as often as may be deemed necessary by the central health authority in this country, so as to give trustworthy information of the health and sanitary condition of those places.

CANADIAN HEALTH ALLIANCE.

Inasmuch as the Dominion of Canada is equally interested with the United States in protecting itself and the United States from the importation of dangerous diseases, we suggest that congress take such measures as will bring about concerted action with the Dominion and the British government, by which the consuls of this country or of England at foreign ports shall examine and take such action as they may deem effective, and notify the authorities of such government as has authority over any port to which any ship may sail in the United States or Canada, in order that such government may be in a position to take effective measures against the importation of these diseases.

We are gratified that the authorities of the Dominion of Canada and of the Province of Ontario have taken active steps toward protecting the people of Canada, and indirectly those of the United States, by the adoption of extensive quarantine regulations. We feel, however, that with respect to those regulations regarding the landing of passengers from the mail steamers along the St. Lawrence, etc., further special regulations for the thorough disinfection of the baggage and effects of all passengers, cabin or steerage, as come from infected ports or places, should be carried out in a manner similar to that recommended by the National Board of Health. Believing that the importation of cholera into this country has usually attended the presence of immigrants from infected countries, we therefore recommend that all such immigrants be prevented from landing at our ports until such time as the danger of the introduction of cholera by them shall have passed.

The inspection and quarantine service inaugurated by the National Board of Health, and set forth in the paper by Dr. Smart before this conference, but which system is now inoperative for want of an appropriation by congress, meets with our cordial approval. To enable these protective measures to be carried out, we recommend that congress be urged in the strongest terms to legislate on this subject at an early date in its coming session, and to appropriate such funds as may be needful. The expenses incident to the work which has to be performed at foreign ports, and the establishment of refuge stations at points on our own coast for the detention and treatment of infected vessels arriving from foreign ports, should undoubtedly be borne by the national government, and not by individual States or municipalities; for the benefits accruing therefrom are general, and not restricted to localities, although some ports and cities on the coast may have a more immediate interest in the matter than others in the interior. It is probable, however, that this national protective work may not be sufficient.

LOCAL SAFEGUARDS.

It will undoubtedly delay and lessen the chances of invasion, but it may not prevent invasion. The poison of the disease is subtle, and may effect an entrance into the country at some unguarded point. The funds necessary to the stamping out of the disease in a particular locality, and to the prevention of its spread to other localities, might in some instances be borne by the municipality or state affected; but should the disease occur in a locality which has failed or is

unable to make provision for the occurrence, its spread to other cities and states would be imminent. The want of means at the infected point would be disastrous to many others. Congress has recognized the necessity for aid to state and local boards of health under similar conditions in the case of yellow fever. In 1879 the sum of $500,000 was appropriated, and placed at the disposal of the National Board of Health; and the records show that of this sum $160,000 was employed in combating the epidemic of that year. We therefore recommend that the influence of this conference be used with the view of having appropriated by the national legislature the sum of $500,000, to be used, or as much thereof as may be needful, in case of a cholera invasion, in stamping out the disease from the infected localities, and in preventing its spread from state to state.

The removal of local unsanitary conditions favorable to the development of cholera is the special work of state and local boards of health. Much has been done already in some states, but much remains which should receive immediate attention. Where it can be done, state sanitary inspectors should be appointed to visit all towns and cities specially liable to the disease, to counsel with the local authorities as to the best methods of prevention. This work should be vigorously prosecuted before the disease reaches our shores.

ADVICE TO CITIZENS.

The cause of cholera is contained in the discharges from persons affected by the disease, or in things infected by such discharges. Should the disease reach our shores, the first case, and after this the first case which reaches any given community, should be strictly isolated. All infective material from these and from any subsequent cases should be destroyed in such manner as to stamp out the disease. Intelligent sanitary precautions beforehand, and scientific disinfection and treatment in the presence of the disease, should take the place of the necessary cruelties of a panic. In case any city or town is infected, the same principles of isolation should in general be applied to the city as to the infected individual. Intercourse with other cities and places should be under sanitary supervision, substantially as set forth in the rules and regulations of the National Board of Health respecting the inspection of travellers, disinfection of effects, vehicles, etc.

Health officers and inspectors appointed by state or provincial boards of health should, in addition to other sanitary work, see that the localities have set apart, erected, or planned to be so set apart or erected, structures which shall possess the sanitary requirements of an isolation hospital. But as regards all necessary work by local boards of health, most state and provincial boards of health have printed and issued documents which give ample instruction.

Your committee recommends that when this conference adjourns it be to meet in Washington, D. C., the second Wednesday in December next, and that the secretary of this conference be directed to invite the attendance at that time of the quarantine officers and the health officers of the principal cities in the United States and Canada; and that all delegates to that meeting be prepared to report the sanitary status of their state or locality, and what steps have been taken to improve the same, and to prevent the introduction of disease.

All of which is respectfully submitted.

HENRY B. BAKER,
Secretary State Board of Health of Michigan,
H. P. WALCOTT,
Chairman Health Department of Massachusetts,
S. S. HERRICK,
Secretary State Board of Health of Louisiana,
PETER H. BRYCE,
Secretary Provincial Board of Health, Ontario, Canada,
JOHN H. RAUCH,
Secretary State Board of Health of Illinois,
COMMITTEE.

Adopted by the Conference of State Boards of Health at St. Louis, Mo., October 14, 1884.

ERASTUS BROOKS,
President of the Conference of the State Boards of Health.
J. N. McCORMACK,
Secretary of the Conference of State Boards of Health.

Adopted by the American Public Health Association at St. Louis, Mo., October 15, 1884.

ALBERT L. GIHON,
President American Public Health Association.
IRVING A. WATSON,
Secretary American Public Health Association.

DOMESTIC CORRESPONDENCE.

215 GEARY ST., SAN FRANCISCO, CA.,
Oct. 27, 1884.

EDITOR OF JOURNAL OF AMERICAN MEDICAL ASSOCIATION:

Dear Sir:—In your issue of the 11th inst. you were pleased to notice at some length my paper on "Old and New Codes," read at the meeting of the California State Medical Society in April last. I think you have drawn some erroneous conclusions from my proposed plan for the establishment of a "caste" in the profession, and I venture to explain more at length my ideas in this direction. It was far from my thoughts to attempt the formation of an aggressive organization; that partakes too much of legislation methods, which have always proven utter failures in the past and will most certainly continue to do so in the future. There is no doubt of the truth of your statement that "no examination can positively determine a man's fitness to be a practitioner," and "his success in the actual conflict with disease is the only true criterion by which his merit can be judged;" but allow me to ask whether you would hesitate for one instant as to which class of men you would select a doctor from, provided you had no personal acquaintance with the individual. From among those whom you knew had passed a thorough and critical examination in all the tenets of the profession, or from the great mass of so-called medical men who come from nobody knows where? You who have had such good opportunity of knowing, through the earnest work of your State Board of

Health, the perfect ease with which a diploma can be obtained from many of the medical schools of the country, and who, at the same time, stand at the head of the accredited organ of the American Medical Association, can illy afford—so it would seem to me—to make use of the veritable arguments of the "Sweet Family," "natural bone-setters," and others of like ilk.

Will you kindly inform me why, when our Government in the early days of 1861 found a great necessity existing for reliable medical men, it established through Congressional enactment a special corps of surgeons and assistant-surgeons under the name and title of Surgeons and Assistant-Surgeons U. S. Vols. General Staff, and designated their duties as being confined to such positions as Medical Directors of Army Corps, Division and Brigade Surgeons, Surgeons in charge of General Hospitals, and Medical Inspectors of Armies and Departments? And also, why all applicants for these positions were obliged to submit to a rigid examination before an Army Board appointed for that special purpose? And also, why, as a further criterion, no person successfully passing said examination should receive the appointment of Surgeon unless he was at least 30 years of age?

Has not Dr. Gihon set forth in most striking terms the utter absurdity of many of the examinations made before the Army Medical Boards of to-day, and shown the shameful ignorance manifested by many of the applicants for positions?

The facts are as I have stated. In our country, under the existing form of government, there can never be any limit placed *by law* upon the number of medical schools that shall graduate students. Neither can there be any uniform standard of requirements for such graduation enforced. We must face these facts; no logic, no reasoning, no anything will change them. The consequence is that our entire country is flooded with graduated doctors, good, bad and indifferent, but in swarms and multitudes. I am not taking into account the armies of quacks and irregulars, only those supposed to be regulars.

How is it possible for the people to select from these masses with judgment? It is in this extremity that I ask relief in the establishment of higher grades in the profession—not in the spirit of *aggression*, but in the spirit of *progress*.

As in our civil war the surgeons and assistant-surgeons, U. S. Vols. Gen. Staff, were on a par with the medical officers of the regular army, by reason of the increased demands in the way of examinations, etc., made upon them by the government, and which were not made upon the great bulk of surgeons and assistant-surgeons appointed from the different states; and as a commission in this special corps placed its possessor at once and without hesitation, on a certain established basis, so I would have in the great professional field higher organizations, entrance to which can only be had except by the attainment to certain standards, then a diploma, or certificate, or whatever might be used to signify that the possessor had complied with the requirements, the fact of such possession would give him recognition at once.

I would not have you or any one else infer that I for one moment could or would convey the impression that there were not just as eminent medical men, just as able surgeons on duty with the regiments from the different states during the war as could be found in the regular Army Corps or that of the U. S. Vols. Gen. Staff. Nor would I dare to say that in the rank and file of the profession there might not remain men infinitely superior to those entering the higher grades. What I do mean to say, is that the possession of a higher title would give a man recognition at once wherever he might be, or wherever he might go. Neither the laity or the profession could make any very serious mistakes in demanding his services, either for advice or consultation. At the same time it would be a direct stimulant to a higher education, and those schools that did not bring their matriculants up to the required standard on final examinations, would find themselves dropping out of the race for want of material.

I send you this as a letter, and ask you to publish it as correspondence. You may criticize as severely as you will, only give me opportunity for reply.

Very truly yours,

A. M. WILDER, M.D.,

Late Surgeon and Brevt. Lieut.-Col. U. S. Vols. Prof. Ophthalmology and Otology Med. Dept. University of California.

PHILADELPHIA LETTER.

PHILADELPHIA, OCT. 31, 1884.

Dear Doctor:—Our schools are fairly at work, and it would seem as though with the array of talent offered in our city that we ought to educate *medically* to a certain extent. What we do turn out, may seem good enough for the outside world, but it would seem as though for home use it were of no value. We are led to this view by the recent selections by two of our schools. The Jefferson has always preferred to import her professors, and perhaps she knew so well the calibre of her graduates that she had reason to look elsewhere. But now comes the University whose trustees are compelled to look to a foreign land for the occupant of a chair. As if to confirm the view as above, our almshouse has been compelled to import its head nurse from England. We have had for many years her Nurse Training Schools actively at work, but neither seems capable of producing results fit to carry on the work required in the great hospital connected with the almshouse.

The old plan is reversed. In place of going abroad to study, we import teachers, and perhaps at some distant day we may educate men and women fit to take their places.

Our city is dirty, but healthy. Dirt alone does not seem to produce disease. Thanks to the wretched paving, it is difficult to clean the streets, and thanks equally to official inefficiency they are not cleaned. Our daily papers almost constantly growl over this state of things, but it is of no consequence. Should the cholera approach, we may expect a spasmodic effort when too late. But after all, it reminds one of a paper on Cholera Infantum read some years ago before

our local medical society in which the author announced that the disease was the result of filth and heat. When he had concluded, a member asked, if that were true, how was it possible that any of the children in a certain locality escaped, inasmuch as said neighborhood was remarkable for its filth, and yet during the summer just passed, cholera infantum, in fact all forms of disease had failed to occur, and the whole region was as remarkable for its health.

Speaking of medical societies brings up the fact that our County Medical Society now numbers its members up to about 500. This is the union of all specialists and general practitioners; while the Pathological, the Obstetrical, the Neurological, the Medico-Legal, etc., devote their evenings to the subjects after which they are named. Judging by the volumes put forth, each body seems to succeed in evolving from its members a goodly share of work.

Our clinics under the name of dispensaries and hospitals are numerous, and show that not only the younger members of the profession but many of the older ones devote a goodly portion of their time to free prescribing. We had nearly said "for the poor," but this would have been a great error. Fully half of those who apply at such places are abundantly able to pay for both medicine and advice. We have just been told of a case now receiving first-class advice at a public clinic, yet the patient is the daughter of a man owning four horses, several houses, and who is doing an excellent business. Knowing these things, is it any wonder that our profession is crowded here? or that the members must resort to a variety of plans to keep the wolf from the door? Yours,

PHILADELPHIA.

OVARIOTOMY.

To the Editor:

Dear Sir.—In your issue of October 25, you publish a letter from Prof. Donald McLean, of Detroit. In this he corrects his statement of statistics, *made in Washington last May*. At that meeting he said that from Oct. 1, 1883, to May, 1884, he had done *five ovariotomies*, and that all the cases had recovered. He now says that *one* of these cases died. That leaves him then with *five* ovariotomies from Oct. 1, 1883, to May, 1884, with *one* death and *four* recoveries. Now, I have in my possession a copy of the death certificate of *another*. She died on the 30th day of January, 1884, at Lansing, Mich. Will Prof. McLean recall this case also?

Very respectfully yours,

R. S. SUTTON.

419 Pennsylvania Avenue, Pittsburgh, Pa.

BOOK REVIEWS.

ON TUMORS OF THE BLADDER, their Nature, Symptoms and Surgical Treatment, Preceded by a Consideration of the best Methods of Diagnosing all forms of Vesical Disease, including Digital Exploration and its Results, by SIR HENRY THOMPSON, F.R.C.S., M.B., etc. Phila.: Blakiston, Son & Co. 1884 Pp. 110 (with six plates).

We believe this monograph is the first important contribution to the new and important question of digital exploration of the bladder.

Although the work is entitled "Tumors of the Bladder," yet the vital part of it is contained in the discussion of cystotomy as a justifiable resource in obscure cases of bladder disease, as a step toward diagnosis by digital exploration of the interior of that organ.

This is true first, because no case of tumor can be diagnosed or treated without cystotomy as a preliminary step, and, secondly, because the operation, which is not a serious one, gives marked relief in a large number of cases, even where no tumor is found which can be removed. The relief thus seen to follow, is due to the perfect *rest* from distension, tenesmus and catheterization which the perineal opening allows to the inflamed organ.

Primarily, therefore, this little book sets out to approve and justify the opening of the bladder for exploration in a large number of cases which heretofore have baffled surgical skill. As this is a question which has for some years been pretty frequently in the minds of surgeons on theoretical grounds, the present contribution will be regarded as settling a vexed question, so far as one man's authority can decide.

In speaking of a tumor found at the autopsy on a case of fatal bladder disease, Sir Henry says:

"It was clear to me from this case that the ordinary sound, "a lengthened finger" in practised hands, had proved incapable of giving me sufficient information relative to the presence of a considerable growth within the bladder. Supposing that I could but once have put my real finger there, instantly discovering, as I should have done, that easily removable tumor, how different would have been the issue of that unhappy case! He might have been enjoying life and health to-day. What, then, was to prevent me in future, under circumstances of equal gravity and like obscurity, from determining the presence or absence of such a growth by the direct sense of touch, as I could easily have done had the necessity for applying it ever occurred to me? The questions, therefore, naturally presented were: Might it not be possible to examine with my finger the whole interior surface of the bladder; and, if so, from what region could such exploration be most easily and safely accomplished—from the perinæum or from the pubes?"—Pp. 10–11.

Here we find stated at once the *rationale* and the justification of the operation for digital exploration of the bladder.

Histories in detail are given of forty-three cases where it was performed. In twenty of these tumors of the interior of the bladder were actually found present and removed. In most of the remainder marked relief followed the operation. Six admirable colored plates and a number of engravings add to the clearness of the work. E. W. A.

AN AID TO MATERIA MEDICA. ROBERT H. M. DAWBAIN, M.D., New York. J. H. Vail & Co. Cloth, 86 pp.

Contains Drugs, Officinal Preparations, their strength, dosage, etc. Table of the solubility of chemicals in water and alcohol. Simple methods of metric prescription writing. The author's rule for

teaspoonful doses is this: For a two ounce mixture order 60 c.c. to contain 1 gm of the drug to each grain in the dose. C. E. W.

ELEMENTS OF PHARMACY, MATERIA MEDICA, AND THERAPEUTICS. By WILLIAM WHITLA, M.D. (Q.U.I.), Physician to the Belfast Royal Hospital; Consulting Physician to the Ulster Hospital for Diseases of Women and Children; Vice-President of the Ulster Medical Society, etc. With Lithographs and Woodcuts. Second Edition. London: Henry Renshaw, 356 Strand. 1884.

This is a book of 602 small and rather closely printed pages, in the less expensive English style of publication.

The first 100 pages are devoted to Pharmacy; the next 124 to Materia Medica; then 189 to Therapeutics; 59 to New Remedies; and the remainder to the Administration of Remedies, Prescription Writing, Chemical Reactions, Weights and Measures, and a copious Index. The subjects in each division of the work are treated of in alphabetical order.

Of course, when so much is included in so small a compass, everything must be treated in the briefest manner; yet for quick and brief references this work will be found both convenient and useful. From Jansen, McClurg & Co., Chicago.

NECROLOGY.

SOUTHWORTH, CHARLES T., M.D., of Monroe, Michigan, was born in Chenango County, New York, May 19, 1827, and died August 12, 1884, in the 57th year of his age.

In 1835, his father, who was also a physician, removed to Monroe, Mich., where he practiced medicine until his death, which occurred in 1843. The son was then placed in a select school where he prepared for college. He afterward went through the Freshman class at Oberlin, Ohio, and the Sophomore and Junior years at the University of Michigan. His father's death called him home during his Junior year, and he did not return to the University. He commenced the study of medicine immediately, and entered the College of Physicians and Surgeons in New York City. In the spring of 1846 he sailed for Europe. He took a six months' course of lectures under Ricord and Trousseau, in Paris; and then went to Madrid and studied under Saavedra. Here he graduated in 1849. After this thorough preparation, he practiced in Havanna, Cuba, until 1851. He then removed to Matamoras, Mexico, remaining there through the cholera epidemic of the summer of 1851. He went from Matamoras to Vera Cruz, where he was commissioned Division Surgeon of Cavalry. He marched with the army to the city of Mexico, and remained there until the abdication of Santa Anna, in August, 1855. During the next three years he was engaged in private practice in the City of Mexico; but, owing to the entire overthrow of the Church party—the result of the revolution—he left the country in 1858. He returned to Monroe in the same year, where he remained the rest of his days, leaving only for a term of service in the Civil War. In February, 1863, he was commissioned Surgeon of the 18th Michigan Volunteer Infantry. He was soon after ordered to establish and take charge of the Post Hospital at Nashville, Tenn., and remained in the service until mustered out in June, 1864.

Dr. Southworth was a member of the Masonic Fraternity, a Royal Arch Mason, and High Priest of River Raisin Chapter No. 22. He was a permanent member of the Michigan State Medical Association, also of the American Medical Association; and was President of the Southern Michigan Medical Society.

He was always opposed to the State's control over medical education. In his political views he was a Democrat, but never took an active part. Dr. Southworth's study under the ablest European physicians, his wide practice, and extensive experience, enabled him to enjoy in his later years a lucrative business. His death was the result of an injury which happened on the 26th day of February last; never having recovered, the disease was pronounced to be "valvular disease of the heart, arising from injury."

Dr. Southworth leaves a family of a wife and five children, two sons and three daughters. The older son is now in his Junior year in the Michigan College of Medicine, Detroit, Michigan.

MISCELLANEOUS.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY DURING THE WEEK ENDING NOVEMBER 8, 1884.

Craig, Thomas C., Passed Assistant Surgeon, to the "Alliance," for temporary duty, Nov. 1, 1884.

Swan, Robert, Passed Assistant Surgeon, detached from the Naval Hospital, Norfolk, Va., and placed on sick leave, November 3, 1884.

Wieber, F. W. F., Appointed Assistant Surgeon, Nov. 3, 1884.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 1, 1884, TO NOVEMBER 7, 1884.

Spencer, W. C., Major and Surgeon, ordered to Fort Trumbull, Conn., for duty as Post Surgeon, relieving Assistant Surgeon Wm. J. Wilson, U. S. A., who will report at Department Headquarters and await further orders. (S. O. 227, Department of the East, Nov. 5, 1884.)

Town, F. L., Major and Surgeon, assigned to temporary duty as Post Surgeon, Ft. Clark, Texas. (S. O. 145, Department of Texas, Oct. 27, 1884.)

Bentley, Edwin, Major and Surgeon, to be relieved from duty at Ft. Clark, Texas. (S. O. 145, Department of Texas, October 27, 1884.)

Corhisier, W. H., Captain and Assistant Surgeon, ordered to Ft. Grant, A. T., for duty as Post Surgeon. (S. O. 102, Department of Arizona, Oct. 30, 1884.)

Hopkins, Wm. E., First Lieutenant and Assistant Surgeon, ordered to Ft. Lowell, A. T., for duty as Post Surgeon. (S. O. 102, Department of Arizona, Oct. 30, 1884.)

Egan, Peter R., First Lieutenant and Assistant Surgeon, relieved from duty at Ft. Lowell, A. T., and ordered to Ft. Bowie, A. T., for duty as Post Surgeon. (S. O. 102, Department of Arizona, Oct. 30, 1884.)